

CHRONIC HEPATITIS IN THE MEDITERRANEAN THEATER

A NEW CLINICAL SYNDROME

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In a previous communication we have reported our observations on acute infectious hepatitis in the Mediterranean theater.¹ During the course of these studies it became apparent that certain patients failed to recover promptly, exhibiting symptoms and findings indicating persistent hepatic disease for prolonged periods of time with a tendency toward exacerbations and remissions. These cases present a sufficiently distinctive and uniform clinical picture to justify their consideration as a separate group or syndrome, which we have called chronic hepatitis. By the use of the term "chronic" we refer only to duration without implication regarding the nature of the pathologic process or the eventual prognosis. Although the existence of this condition has been recognized by others,² we believe that this is the first detailed clinical description based on adequate material.

Because of the large number of persons who have had infectious hepatitis during the last few years, the interpretation of residual symptoms and findings has become an important problem. It is often necessary to determine whether an organic lesion exists in such cases and, if so, whether further hospitalization and treatment will be beneficial. It is not possible to answer all of these questions with finality at the present time, but we believe that sufficient data are available to indicate a practical clinical approach to the problem.

It should further be pointed out that the term "syndrome" has been used advisedly, since it is probable that other etiologic types of hepatitis may present a similar clinical picture. Certain heretofore vague conditions common to civilian practice may well be clarified by these observations.

This work was made possible by the Surgeon's Office, Mediterranean Theater of Operations, and was greatly aided by many medical officers, nurses, enlisted personnel and other military personnel.

1. Barker, M. H.; Capps, R. B., and Allen, F. W.: *Acute Infectious Hepatitis in the Mediterranean Theater*, J. A. M. A. 128:997 (Aug. 4) 1945.

2. Polack, E.: *Chronic Hepatitis in Young Persons With or Without Intermittent Jaundice*, Acta med. Scandinav. 98:614, 1938. Caravati, C. M.: *Posthepatitis Syndrome*, South M. J. 37:251 (May) 1944. Findlay, G. M.; Martin, N. H., and Mitchell, J. B.: *Hepatitis After Yellow Fever Inoculation*, Lancet 2:340 (Sept. 9) 1944. Wilensky, A. O.: *The Interrelationship of Undernutrition, Fatigue and Latent Liver Disease in the Industrial Worker*, New York State J. Med. 45: 1447 (July 1) 1945.

MATERIAL AND METHODS

This study is based on 76 patients obtained from among the unselected group of 431 cases of hepatitis previously described.¹ Many other examples of this condition were seen only in consultation. Although the clinical picture served as the primary basis for selection of cases, it was obviously necessary for statistical purposes to employ some arbitrary definition. Since the duration of the acute disease is both long and variable, the criticism must be avoided that we are simply dealing with the expected variants. Consequently we have chosen only those patients with evidence of active hepatitis four months or more after the onset (table 1). This is equivalent to a minimal period of five and one-half months from onset to recovery. An additional 79 patients were observed in the group of 431 who presented a similar picture but fell short of the foregoing criteria. Most of these were admitted in the acute stage, failed to recover in three months and so were evacuated to the United States. Many undoubtedly represent the same condition.

TABLE 1.—Duration of Active Infectious Hepatitis in 76 Cases of the Chronic or Persistent Type

	Months										Total % of Cases	Total
	4	5	6	7	8	9	10/12	13/24	25/36	36		
Number of cases												
Recovered.....	7	5	4	3	0	4	5	4	1	33	43.5	
Unrecovered....	2	9	7	4	9	6	3	3	0	43	56.5	
Total cases.....	9	14	11	7	9	10	8	7	1	76		

The final outcome in the unrecovered cases is not known.

The methods employed were the same as in our previous report.¹ Normal figures for the 5 mg. per kilogram sulfobromophthalein dye test were established during our Fort Custer, Michigan, study.¹ Fifty-five out of 56 normal soldiers who were given this test showed zero dye retention in one hour, and 1 man had 2 per cent retention. In order to allow for technical errors we have taken 3 per cent or more retention in one hour as abnormal. This is a conservative figure as judged by the literature.³

Microscopic observations on liver tissue obtained at biopsy as well as bacteriologic and virus studies were made by others on some of these patients. These results, when completed, will be published separately.

ETIOLOGY AND INCIDENCE

All of our cases gave a history consistent with acute infectious hepatitis either with or without jaundice at the onset of the disease. Evidence of activity of the hepatitis was always present, although sometimes minimal, during the interval between the onset and the

3. Mateer, J. G.; Blatz, J. I.; Marion, D. F., and MacMillan, J. M.: *Liver Function Tests*, J. A. M. A. 121:733 (March 6) 1943. Soffer, L. J.: *Present Day Status of Liver Function Tests*, Medicine 14:185 (May) 1935.

period of observation. This period was never less than three months. Jaundice occurred or recurred in 29 cases during the study period (table 2). Finally, all cases showed a positive exercise tolerance test,¹ indicating the existence of a potential recurrent acute hepatitis picture. In view of these facts it is only reasonable to suppose that a persistent virus infection is present.

TABLE 2.—*Prognostic Significance of a History of Jaundice During the Course of Chronic Hepatitis Prior to Admission and Jaundice at the Time of Observation*

Earlier in Course	Period of Observation	Number of Cases	Total Recovered	Per Cent Recovered
Jaundice	Jaundice	20	6	30
Jaundice	No Jaundice	21	8	38
No Jaundice	Jaundice	9	4	44
No Jaundice	No Jaundice	26	15	58

although there may also be additional etiologic factors of importance. As yet the bacteriologic studies have not been made to determine the presence of virus in the blood, liver or excreta.

It has been impossible to ascertain accurately the true incidence of this condition. It is probably quite variable. The great frequency (18 per cent) observed in our group was in part due to the poor nutritional condition of many soldiers at time of onset resulting from prolonged combat and in part to inadequate treatment of the acute disease. This figure, of course, is only for a particular group of hospital patients and does not indicate the number of acute cases in which the chronic form of the disease developed. During the last year the improvement of these factors has been associated with a reduction in incidence. The fact remains, however, that chronic hepatitis is much more common than generally suspected. It is too often unrecognized.

CLINICAL PICTURE

The clinical picture to be described is applicable to all phases of the chronic disease except a severe icteric relapse. Here the picture is the same as that of acute hepatitis except for severity, duration and prognosis.

History.—There is usually a history of an acute febrile illness consistent with acute hepatitis at the onset of symptoms. Occasionally the onset is insidious, as it may be in 10 to 15 per cent of acute cases. Following a period of illness, partial recovery occurs. Symptoms of the chronic disease then develop and persist with exacerbations and remissions. The patient may seek the doctor because of an exacerbation or simply because of persistent symptoms.

Symptoms.—The outstanding symptoms are lassitude, fatigue and mental depression of sufficient severity to be disabling in variable degrees. These are often most evident in the morning on awakening. The patient feels that he is "tired out" or wonders if "he isn't just neurotic." By forcing himself he is able to get through the day's work, but his mental and physical efficiency is low. Mental confusion and symptoms resembling an anxiety state are sometimes seen. True muscular weakness is unusual.

Of more diagnostic importance are those symptoms arising in the right upper quadrant, right lower chest and right lumbar region of soreness, aching, heaviness, fullness and sometimes actual pain. These symptoms are specifically aggravated by exertion and by jolting activity such as a rough automobile ride. Although this effect may be prompt in appearing, it characteristically persists for one or more days. Deep breathing

may produce a sharp, deep, poorly localized pain in the right side of the chest, and lying on the right side is often uncomfortable.

Low grade fever is occasionally present but unusual and suggests intercurrent infection. During the initial phase of an acute relapse, fever is frequently observed. Other common symptoms of chronic hepatitis are anorexia, dyspepsia, flatulence, intestinal cramps, intermittent mild diarrhea and headaches. Weight loss is common and occasionally severe, but many patients are well nourished. In a few instances attacks of severe generalized itching and formication have been seen, induced by heat and emotional states and associated with "goose pimples" and sometimes miliary urticaria.

Physical Findings.—The liver is always enlarged and tender, but exercise may be necessary to make this finding manifest. Tenderness in the right costovertebral angle¹ and pain on fist percussion over the liver are usually present. There is often a latent period of about five seconds before this pain appears or reaches its maximum, which is a helpful differential point. The spleen is occasionally palpable and may be tender. Low, right sided, deep cervical adenopathy is often found during a relapse. The patient may or may not be jaundiced.

Laboratory Findings.—As would be expected, laboratory findings depend on the type of case and degree of activity of the hepatitis. In a severe icteric relapse the findings are the same as in the acute disease.¹ In other cases the laboratory is of less assistance, and often the diagnosis must be made on purely clinical grounds.

The sulfobromophthalein dye retention is abnormally elevated in 66 per cent of cases and has proved to be the most valuable test with which we have had experience (table 3). A normal test, however, does not rule out the diagnosis, although it does suggest that the liver damage is minimal. Retention of more than 9 per cent in one hour (or about 16 per cent in forty-five minutes) has almost always been associated with active hepatitis. A retention of 3 to 9 per cent in one hour means liver dysfunction but does not indicate the nature or whether the hepatitis is active or inactive. Serial tests, of course, are more informative than single determinations.

Bilirubinemia, a prompt direct qualitative van den Bergh reaction and bilirubinuria are significant when

TABLE 3.—*Significant Laboratory Findings in 76 Cases of Active Chronic Hepatitis*

	Nonicteric		Icteric		% of Total Abnormal
	Cases Tested	% Abnormal	Cases Tested	% Abnormal	
Sulfobromophthalein.....	44	61	26	69	66
	47	47	29	76	58
	40	20	29	41	29
	22	36	15	73	51

Patients are separated according to the presence of icterus during the period of observation. No sulfobromophthalein tests were done in the presence of clinical jaundice.

present but may be repeatedly absent. The erythrocyte sedimentation rate is often moderately elevated, but high readings suggest intercurrent infection. The blood picture is variable, although large atypical lymphocytes are often found. Anemia is unusual.

We have also had extensive experience with the Hanger test, serum alkaline phosphatase, serum globulin (table 3) and bilirubin clearance test. These procedures are often of value but are not consistently positive. The

additional use of serum amylase, serum albumin, colloidal gold and oral hippuric acid tests have not proved helpful. Results of urobilinogen determinations employing the usual methods have been too variable to be of aid. We have had insufficient experience with quantitative methods¹ to draw conclusions, but the preliminary results are encouraging.

An observation of practical interest is that the Graham-Cole test may reveal a dim or absent gallbladder shadow even when no jaundice is present. As the activity of the hepatitis subsides the gallbladder shadow gradually reappears or increases in density, as shown by repeated tests. There is also evidence obtained by Capt. Frank Parker Jr., M. C., that active nonicteric hepatitis may be associated with night blindness.

COURSE AND PROGNOSIS

Chronic hepatitis is characterized by a protracted course and a tendency to relapse, as shown in tables 1 and 4. How long active hepatitis may persist is not

TABLE 4.—Prognostic Significance of the Number of Distinct Exacerbations Prior to the Period of Observation, Including Those With and Without Jaundice

Number of Exacerbations	Total Cases	Postvaccinal Hepatitis	Total Recovered	Per Cent Recovered
1	53	6	24	45
2	17	5	7	41
3	5	1	1	20
4	1	1	1	100

Column 2 shows the number of cases in each group with an additional history of postvaccinal hepatitis.

TABLE 5.—Rate of Recovery and Duration of Hospitalization in Chronic Infectious Hepatitis

Chronic Hepatitis	Total Cases	Per Cent of Total Discharged Recovered, Days After Admission				Recovered, Under Average Observation, Days, Hospital		
		42	56	70	84	No. of Cases	Per Cent	Recovered Cases
Group N	46	4	9	15	22	15	33	72
Group R	30	13	40	50	53	18	60	54

Group N received the usual prewar therapy, while group R was treated by improved methods. Unrecovered cases were treated for three months before evacuation.

known, but our unrecovered patients still had active disease when evacuated to the United States after three months of hospitalization. Eight patients were active for more than one year and 42 for more than six months.

The course is variable, the degree of activity remaining fairly constant for months in some cases and fluctuating in others. Thus a given patient may feel fairly well as long as he performs only light duty, but increased exertion or an intercurrent infection may result in a reappearance or accentuation of symptoms. Inadequate treatment perpetuates the disease, although some patients gradually recover spontaneously over a period of months.

One of the most characteristic features of this syndrome is the prolonged treatment necessary to effect recovery. Thus, as shown in table 5, even with adequate therapy, 40 per cent of patients will still have active disease after three months, whereas in acute hepatitis the figure is 10 per cent or less. The duration of an acute icteric relapse is usually much longer than that of an acute primary attack of the same severity.⁴ Furthermore, in patients at bed rest or on minimal exercise subclinical activity of the hepatitis remains present for weeks following apparent recovery. This can be dem-

onstrated by employing the exercise tolerance test or its equivalent. Failure to appreciate this phenomenon will lead to erroneous decisions.

The immediate prognosis is good except in the presence of a severe relapse. Here one must take a more serious attitude than in an apparently comparable primary acute attack. The prognosis regarding clinical recovery and the time that will be required is always uncertain and difficult. Factors to be considered are age, duration of the disease (table 1), the number of relapses (table 4), the severity of the relapses as indicated by jaundice (table 2), the presence of removable precipitating factors as indicated in the next section, and the response to treatment. Although the appearance of jaundice is usually an unfavorable sign, sometimes a sharp icteric relapse may be followed by unexpectedly prompt recovery as if an adequate immunity had been produced. Failure to gain weight in definitely underweight patients is almost always associated with persistence of activity of the hepatitis. The importance of a past history of prewar "catarrhal jaundice," postvaccinal hepatitis or toxic hepatitis is difficult to determine. It is our clinical impression, however, that previous attacks of hepatitis frequently lead to a poorer prognosis.

Regarding the eventual prognosis, little is known. A few patients have been observed with ascites and spider nevi. Some of these improve and some develop a fatal liver failure. Cirrhosis is probably rare. However, it should be pointed out that on the basis of experimental evidence⁵ chronic or repeated liver trauma is more likely to result in permanent liver damage than a single severe insult. There is also considerable evidence in the literature that following infectious forms of hepatitis a large percentage of patients have a disturbance in bilirubin metabolism or excretion lasting for many years and probably of a permanent nature.⁶ Whether this finding indicates a benign dysfunction or whether it is usually associated with a more general disturbance of liver function is a matter of dispute. We can only say that clinical recovery is reasonably complete in the majority of our cases.

FACTORS ASSOCIATED WITH CHRONICITY AND RELAPSE

Exercise and Diet.—It has already been shown¹ that inadequate rest and a poor diet during the primary acute attack are important factors in the development of the persistent type of the disease. Seventy-five per cent of our chronic cases had less than four weeks' hospitalization in their initial acute attack and many had only ten days or none at all. It is probable that a poor nutritional status at the time the disease is contracted is an additional factor.

Infection.—Various intercurrent infections may prevent recovery from acute or chronic hepatitis or induce a relapse. This is particularly true of malaria, atypical pneumonia and dysentery. Acute tonsillitis, scarlet fever, acute pharyngitis, furunculosis and severe pyorrhea may play a similar role.

Tissue Trauma.—Traumatic wounds and surgical operations such as tonsillectomy or appendectomy are

4. Barker, Capps and Allen: Acute Infectious Hepatitis in the Mediterranean Theater, chart 3, p. 1000.

5. Himsworth, H. P., and Glynn, L. E.: Toxipathic and Trophopathic Hepatitis, *Lancet* 1: 457 (April 8) 1944.
6. Soffer, L. J., and Paulson, Moses: Residual Hepatic Damage in Catarrhal Jaundice as Determined by the Bilirubin Excretion Test, *Arch. Int. Med.* 53: 809 (June) 1934. Kornberg, A.: Latent Liver Disease in Persons Recovered from Catarrhal Jaundice and in Otherwise Normal Medical Students as Revealed by the Bilirubin Excretion Test, *J. Clin. Investigation* 21: 299, 1942. Altschule, M. D., and Gilligan, D. R.: Chronic Latent Hepatitis Following Catarrhal Jaundice, *New England J. Med.* 231: 315, 1944.

likely to be followed by a relapse. Inhalation anesthetics, especially ether, are of course an additional factor of considerable importance in such cases. Trench foot is very frequently associated with hepatitis, although the mechanism is not clear.

Alcohol.—When active hepatitis is present, excessive use of alcohol will definitely cause a relapse. We have no evidence, however, that alcoholic addicts are predisposed to hepatitis.

Spontaneous Relapse.—Neeff and his associates⁷ have shown that in certain cases hepatitis may tend to run a cyclic course with several spontaneous exacerbations. This may explain the periods of increased activity of the disease which occasionally occur without cause in patients under apparently constant conditions.

Effect of Menses.—Usually beginning three to five days prior to the onset of menstruation, signs of increasing activity of the hepatitis may appear. In table 6 are a series of observations in such a case. On May 26 there was again a slight increase in findings preceding

TABLE 6.—Effect of Menses in Chronic Hepatitis Without Jaundice

Determination	Onset of Menses May 5 at 5 P. M.							
	April 28	1	6	11	13	19	26	June 3
Sulfobromophthalein, per cent retention 30/60 minutes.....	12/1	15/6	—	10/1	—	8/3	6/2	6/1
Hanger test, 24 hr./48 hr.....	0/±	0/±	—	±/1	—	0/0	±/2	0/±
Liver size, finger-breadth below costal margin.....	3 F	—	3 F	—	3 F	1-2 F	1-2 F	—
Liver tenderness.....	2+	—	1+	—	3+	1+	2+	—
Right costovertebral angle tenderness.....	2+	—	3+	—	3+	1+	2+	—
Symptoms.....	2+	—	1+	—	3+	1+	2+	—

the next menses, which occurred June 4, but the hepatitis was in a less active stage. Fluid retention associated with the menses is undoubtedly an important factor, but there is probably also an increase in activity of the hepatitis, as shown by the changes in sulfobromophthalein retention.

REPORT OF CASES

The following cases serve to demonstrate some of the foregoing points:

CASE 1.—A white medical officer aged 38 was admitted because of progressively increasing lassitude and fatigue for the previous five months. He had received yellow fever vaccine in March 1942 and developed extreme fatigue three months later with anorexia and right upper quadrant pain associated with a large and tender liver. No jaundice or dark urine was observed, but the officer was not hospitalized. Exercise was restricted, and symptomatic recovery occurred in about three weeks. In April 1943, in the Italian theater, the patient had a rather prolonged bout of atypical pneumonia. Convalescence was slow, and residual fatigue persisted. The liver was found to be somewhat enlarged at this time, but no special attention was paid to it.

About March 1, 1944 the patient developed increasing fatigue, lassitude, mental depression, right lumbar and right upper quadrant pain and deep pain in the right chest on breathing. Because of the latter symptom a chest plate was requested but was normal. There were also attacks of generalized pruritus, occasionally accompanied by mild urticaria precipitated by heat and emotional states. Lying on the right

side was uncomfortable. These symptoms became so severe that the patient consulted one of us on March 20, 1944 and the liver was found to be 6 cm. below the costal margin and very tender and was associated with tenderness in the right costovertebral angle. There was no jaundice, dark urine or anorexia, but intestinal cramps and an abnormal amount of flatus were present. A diagnosis of acute infectious hepatitis without jaundice, possibly recurrent, was made.

Against our best judgment the patient was kept in quarters and allowed to do light duty for six weeks. On March 31 the icterus index, serum phosphatase, Hanger test and hippuric acid excretion test were within normal limits. Symptomatic improvement occurred, so that by April 21 the chest pain and right upper quadrant pain had disappeared. Lassitude and fatigue were much less but still present. The liver was only 3 cm. below the costal margin and mildly tender. A sulfobromophthalein dye test showed 6 per cent retention in thirty minutes and 1 per cent in sixty minutes, and the Hanger test was negative. On May 31 symptoms were minimal; the liver edge was just palpable and not tender. No costovertebral angle tenderness was present.

Full duty was resumed in June; only minimal lassitude and fatigue were present. In July lassitude, fatigue and some right upper quadrant aching began to reappear, especially following strenuous exertion. These symptoms, associated with mental depression and symptoms of vasomotor instability, gradually increased until work was accomplished with great difficulty and with increasing inefficiency. Finally, on December 7 the patient was forced to enter the hospital because of the severity of the symptoms. Examination revealed a moderately tender liver 5 cm. below the costal margin with moderate right costovertebral angle tenderness. The qualitative and quantitative van den Bergh tests, the serum phosphatase and the Hanger tests were normal. The sulfobromophthalein excretion was 14 per cent in thirty minutes and 6 per cent in sixty minutes. The bilirubin clearance showed 16 per cent retention after three hours using a 200 mg. dose, a borderline figure, and a double oral Graham-Cole test revealed a very dim gallbladder shadow.

The patient was kept strictly in bed for four weeks and put on a high protein (250 Gm.) diet including about 2 pounds of rare steaks daily. On December 19 the liver was only 2 cm. below the costal margin and mildly tender. Symptoms were much improved. The sulfobromophthalein test showed 2 per cent retention in one hour. On Jan. 3, 1945 the dye retention was zero in one hour. After one month in bed only minimal symptoms were present. The patient stated that he hadn't felt so well for at least a year. The liver was slightly enlarged (3 cm.) but not tender. He was allowed up on minimal exercise for one month and then returned to duty.

Follow-up showed that there was mild increase in symptoms and in the physical findings during the subsequent three months following strenuous exertion, but improvement has continued and in August 1945 the patient is almost symptom free. The sulfobromophthalein test on March 20 was 1 per cent in one hour.

This case shows the prolonged course that chronic hepatitis can run. Whether the March 1944 attack was really the onset or whether it was in April 1943 we cannot say. No jaundice was ever observed. Recovery did not occur until after a two month period of hospitalization, and it is still not certain that it is complete. The correlation between the objective findings and the symptoms suggestive of a psychoneurosis is striking and indicates that the latter are on an organic basis.

CASE 2.—A white soldier aged 19 was admitted on March 2, 1944 because of fever, nausea and vomiting of four days' duration. On Nov. 11, 1943 he had a similar attack associated with "coca-cola" colored urine but no definite jaundice. He was not hospitalized. The acute symptoms subsided in about a week, but since then he had experienced pronounced lassitude, easy fatigue, anorexia and fat intolerance. He continued in combat but was able to perform his duties only with the

7. Neeff, J. R.; Stokes, J., Jr.; Reinhold, J. G., and Lukins, F. D.: Hepatitis Due to the Injection of Homologous Blood Products in Human Volunteers, *J. Clin. Investigation* 23: 836 (Sept.) 1944.

greatest effort. There was no previous history of jaundice. He had not received yellow fever vaccine.

On admission the liver was very tender and enlarged 5 cm. below the costal margin. Moderate jaundice was present. The next day the icterus index reached 44, the maximum elevation. The serum globulin was 3.3 Gm. per hundred cubic centimeters, alkaline phosphatase was 4.5 Bodansky units, the Hanger test was 2+/3+ and the oral hippuric acid excretion test was 2.9 Gm. Repetition of this last test the following day after 15 Gm. of aminoacetic acid gave a result of 3.6 Gm.

One month after admission the icterus index was normal, the liver was only slightly enlarged (3 cm.) and only slightly tender, and symptoms were much improved but the sulfobromophthalein dye detention was 36 per cent in thirty minutes and 18 per cent in sixty minutes. After two months' total bed rest the liver was not definitely tender, only borderline in size (2 cm.) and symptoms were minimal, so the patient was allowed out of bed. Following thirteen days on an ambulatory status an exercise tolerance test was started. By the morning of the third day the liver had become definitely tender and had increased in size to 4 cm. below the costal margin, and tenderness had appeared in the right costovertebral angle. Lassitude, fatigue and anorexia became evident and a constant ache developed in the right upper quadrant. The sulfobromophthalein retention was 22 per cent in thirty minutes and 17 per cent in sixty minutes.

The patient was returned to bed. The aforementioned findings and symptoms remained for about ten days before beginning to subside. A check sulfobromophthalein test was 38 per cent in thirty minutes and 18 per cent in sixty minutes.

The patient was evacuated to the United States because of obvious activity of the hepatitis after three months' hospitalization.

This case demonstrates the development of the chronic state due to lack of treatment in a mild acute hepatitis. Such initial attacks are often diagnosed as an upper respiratory infection. The subsequent symptoms may be severe but not totally disabling and are frequently looked on as functional by the medical officer. Most important is the apparent clinical recovery at bed rest and the demonstration by means of the exercise tolerance test of persistent activity after more than two months of treatment. One would expect a primary acute hepatitis to have recovered by this time.

DIAGNOSIS

The diagnosis of chronic or relapsing hepatitis with jaundice is not difficult if the past history is kept in mind. Obstructive, hemolytic and spirochetal forms of jaundice and toxic hepatitis must be ruled out. This subject is well covered in the literature. Active hepatitis must not be diagnosed on the basis of low grade elevations of serum bilirubin alone (2.0 mg. per hundred cubic centimeters or under) since many patients clinically recovered from infectious hepatitis may have such findings for years.⁶ If other evidence of activity is not present the exercise tolerance test must be employed.

In the absence of jaundice, diagnosis becomes more difficult, especially if the initial acute attack was also non-icteric. In the latter case the physician must be unusually cautious in making this diagnosis and the picture must be very clearcut, else patients will be unnecessarily invalidated and other conditions will be missed.

A definitely enlarged and tender liver must be found and there must be an abnormal exercise tolerance test or its equivalent. If such liver findings are already present, exercise is, of course, unnecessary. There should be a history of an acute attack of hepatitis preferably within a year, with residual symptoms suggesting at least mild activity. The presence of characteristic symptoms which are aggravated by exertion or by

jolting activities is important. Abnormal laboratory findings are valuable corroborative evidence, although not absolutely necessary. An elevated sulfobromophthalein retention or an increased serum bilirubin is to be especially desired. A dye retention of 5 per cent in one hour or more is desirable for diagnosis in cases that have never been icteric. This finding alone, of course, indicates only liver dysfunction and does not constitute a basis for the diagnosis of active hepatitis.

It is also necessary to consider other etiologic types of hepatitis. Acute alcoholic hepatitis, chronic brucellosis and toxic hepatitis as from carbon tetrachloride may present somewhat similar pictures especially from the laboratory point of view. The history and, in certain cases, specific tests will usually clarify the situation.

The determination of liver size and tenderness on physical examination is not easy and because of its importance warrants discussion. Percussion of the upper border is essential in order to rule out ptosis. To be certain of the location of the lower border, the actual edge should be felt. Frequently, light palpation will be more satisfactory than the usual deep variety, since the patient with a tender liver is likely to stop inspiring when the edge meets the physician's hand. When the edge is not definitely palpable, percussion is the most reliable guide. In doubtful cases a roentgenogram may be helpful. It must be remembered that the location of the normal liver edge during deep inspiration is variable and that it is often readily felt 1 cm. below the costal margin. One can be certain of moderate degrees of enlargement only when definite changes in size occur. Finally, the normal liver is somewhat tender if the edge is "flipped." Clinical judgment is necessary for proper evaluation.

The most frequently encountered conditions that have had to be differentiated from this syndrome are as follows:

Chronic Diarrhea and Irritable Bowel.—Because of the frequency of intermittent diarrhea in chronic hepatitis these conditions are readily confused. Bowel tenderness in the right upper quadrant can be distinguished from hepatic tenderness by noting that in the former case the tenderness is more pronounced during expiration, whereas in the latter case it is more pronounced during inspiration. Percussion tenderness may be present in both instances.

In uncomplicated chronic diarrhea there is ordinarily no abnormality in liver findings or in liver function tests. However, in amebiasis and possibly certain other types of chronic dysentery, liver disease may occur. Furthermore, it is not unusual to find infectious hepatitis and amebiasis in the same individual. Specific therapy should be employed and the hepatitis evaluated after the amebiasis is under control.

Duodenal Ulcer and Chronic Cholecystitis.—The not infrequent finding of an irritable duodenal bulb at x-ray examination in cases of chronic hepatitis has led to occasional confusion with duodenal ulcer. It is probable that a duodenitis is present. Because of the symptomatology and an absent or dim gallbladder shadow with the Graham-Cole test the diagnosis of chronic cholecystitis may be erroneously made. In the case of infectious hepatitis, however, this test will become negative as recovery progresses. In our experience the exercise tolerance test, liver function tests and history have usually sufficed to differentiate these conditions.

Psychoneurosis.—This is the most frequent diagnostic error. Confusion arises because of the mental depres-

sion, the superficially suggestive symptomatology and the usual psychoneurotic factor present in any prolonged illness. If objective findings are relied on, the diagnosis is not difficult and the only real problem is the extent of the functional factor if any. If active hepatitis is present, caution must be exercised in making an additional diagnosis of psychoneurosis because bed rest will frequently relieve all symptoms.

Chronic Malaria.—Untreated chronic malaria may present a picture very similar to that of chronic hepatitis. Anemia, a high erythrocyte sedimentation rate, reticulocytosis and pronounced splenomegaly are suggestive findings. Since these two conditions frequently occur together, it is necessary to employ the usual diagnostic criteria for hepatitis after specific antimalarial therapy has been completed.

MANAGEMENT

The first consideration is the establishment of the diagnosis. In this connection it should be made clear that ordinarily the patient with active chronic hepatitis who comes to see the doctor and has been on duty or at work has evident objective findings. An exercise tolerance test under such circumstances is unnecessary and undesirable and should be reserved for cases in which the diagnosis is in doubt. If active hepatitis has been established the patient should be put to bed. Lavatory privileges can be allowed except to the seriously ill, but otherwise strict rest must be enforced. The patient should be placed on a well balanced, high protein (250 Gm.), high caloric diet as in the acute disease.¹ The most desirable proteins are meat, milk, cheese and eggs. The question of fats is still not settled, but meat fats are not well tolerated. Two ordinary polyvitamin capsules can be given daily. Treatment is otherwise symptomatic.

The effectiveness of this therapeutic regimen is shown for the present series in table 5. Group N, seen during the spring of 1944, received the generally accepted therapy of a high carbohydrate (350 Gm.), low fat (40 Gm.) and average protein (85 Gm.) diet with only moderate bed rest, whereas group R, studied during the summer of 1944, received a high protein (250 Gm.), high carbohydrate (350 Gm.) and low fat (40 Gm.) diet accompanied by strict and adequate bed rest. The better results in the R group are apparent and we believe significant, although the naturally variable course of this condition suggests caution in drawing final conclusions. It will be noted that fat was low in both diets, so that the effective nutritional factor must have been either the increased protein or the greater caloric intake which resulted from increased palatability. The more strictly enforced bed rest in the R group was also most effective.

It is important to search for any complicating conditions or foci of infection such as malaria, amebiasis or apical abscesses, especially if recovery is slow. Tonsils should not be removed unless severely infected, owing to the danger of precipitating a relapse.

The decision as to when a patient should be allowed up is difficult. Conservatism is obviously important. The criteria employed for acute hepatitis¹ are adequate, provided the patient is kept in bed for two or more additional weeks. The patient must be carefully followed during the ambulatory period and then for another two weeks if actually exercising or for perhaps four weeks if simply returning to work. If findings and symptoms recur, bed rest must be resumed.

INACTIVE HEPATITIS

We have reserved the term inactive hepatitis for patients who have objective evidence of liver disease or dysfunction and a past history of acute hepatitis but who have a normal exercise tolerance test. A large nontender liver or an increased sulfobromophthalein retention has been accepted as satisfactory evidence. Low grade elevation of the serum bilirubin might also be acceptable. Symptoms are limited to dyspepsia, gas, fat intolerance and slight fatigue, none of which are disabling. Since neither exercise nor rest has any significant effect on the clinical or laboratory picture, hospitalization or bed rest is unnecessary. It is therefore of great practical importance to distinguish this condition from active hepatitis. Furthermore, with the exception of the small group mentioned later, these patients are not disabled. The presence of additional symptoms of hepatitis suggests either activity of the process or a functional element.

Seventy-four per cent of all acute cases in the N group that recovered (81 cases) fell into the inactive category at the time of discharge to duty as judged by the sulfobromophthalein test. Thirty-two per cent of the total had a dye retention of from 5 to 9 per cent in one hour, and in 42 per cent it was 3 or 4 per cent in one hour.

TABLE 7.—Gradual Improvement in a Case of Inactive Hepatitis Without Treatment

	Jan. 1	April 19	29	May 6	13	30	June 27	Dec. 3	8
Sulfobromophthalein, per cent retention in 30/60 minutes.....	..	15/3	16/5	22/7	9/5	12/6	18/8	6/5	6/2
Liver size, fingerbreadths below costal margin....	..	2F	1-2F	2-3F	1-2F	1-2F	1-2F	1-2F	1-2F
Onset of acute hepatitis	X								

The average period of hospitalization in this group was sixty-six days. It is evident that complete recovery from infectious hepatitis usually requires at least two months and that inactive hepatitis represents the last stage in healing.

The eventual prognosis of inactive hepatitis is not known, but from a clinical point of view it appears to be excellent. In some cases progressive improvement in findings may continue to occur for many months even though the patient is on duty, as shown in table 7. This officer returned to work about April 22, explaining the increase in abnormal findings following the first test. He remained on duty throughout the period of these observations without symptoms and without liver tenderness. We have seen many similar cases in which findings were still present at the end of a year.

A special group of cases must be mentioned, fortunately small in number, who fall into the inactive category. In addition to the usual picture they show decided weight loss, true weakness, fatigue and gastrointestinal symptoms. They are often repeatedly hospitalized without benefit. In 1 instance the condition has remained static for three years. It is probable that these cases represent a relatively severe form of inactive hepatitis.

Treatment of the ordinary case of inactive hepatitis is unnecessary. In fact it is desirable to encourage normal activities so as to avoid mental fixation on the residual symptoms. A continuation of the dietary regimen, if feasible, can of course do no harm. In the special group mentioned, the diet is probably important and

should be continued for six to twelve months or until recovery occurs. Physical exertion should be limited to light duties.

COMMENT

We have referred advisedly to chronic hepatitis as a syndrome. It is believed that our cases represent a single disease entity, but it is likely that other etiologic types of hepatitis may present a similar clinical picture. The etiology in our group is, as yet, not entirely clear. It appears probable that the infectious agent of the acute disease is still present and that the liver lesion is at least in part of an infectious nature. The frequent occurrence of icteric relapse even though jaundice was absent in the initial acute attack is strong evidence for this point of view. There is no reason to believe that nonicteric cases differ at all from those with jaundice except as regards severity. A past history consistent with acute hepatitis was always obtained. Furthermore, the abnormal clinical and chemical response to exercise uniformly present suggests that under proper circumstances any of these patients are capable of developing an icteric relapse. Thus, persistent infection appears to be one of the chief etiologic factors. It is possible that reinfection may be of importance in some cases. Recovery is probably prevented or delayed by inadequate rest, poor nutrition and intercurrent infection. Final judgment must await demonstration of the infectious agent.

A direct nutritional effect on the liver⁸ is probably an etiologic factor in certain cases. Its importance is difficult to assess. The fact that chronic hepatitis can occur in apparently well nourished persons and in patients on the recommended hepatitis diet indicates that this explanation of chronic hepatitis is not always valid. The possibility of a purely nutritional liver lesion must be considered and may well occur, but it is very unlikely that this is the cause of the cases described in this report.

The relationship of the symptomatology here described to liver disease has not been previously recognized. The correlation between symptoms and the laboratory and clinical evidence of activity of the hepatitis is so definite that it is only reasonable to assume a causal relationship. It is possible that other etiologic types of hepatitis may be associated with a similar clinical picture. Chronic brucellosis and protracted convalescence in infectious mononucleosis may fall in this category as well as certain cases of so-called functional bowel disorders. It may be that certain symptoms in these conditions hitherto unexplained will prove to be related to a form of hepatitis.

SUMMARY

1. The syndrome of chronic infectious hepatitis is a reasonably common condition of a disabling nature.
2. The most characteristic and diagnostic feature is the increase in physical findings, symptoms and laboratory evidence of liver dysfunction produced by exercise. Frequently a patient appears to have recovered while on minimal exercise, but an increase in physical activity will cause the clinical syndrome to reappear.
3. The essential treatment is adequate bed rest and a high protein diet.
4. There is an important distinction between active and inactive hepatitis. The latter group includes cases with objective evidence of liver disease and a normal reaction to exercise. Symptoms are not disabling, and no treatment is necessary.

8. Himsworth, H. P., and Glynn, L. E.: Prevention of Experimental Massive Hepatic Necrosis by Methionine, *Clin. Sc.* 5: 135 (Aug.) 1944; Toxinopathic and Trophopathic Hepatitis, György, P.: Experimental Hepatic Injury, *Am. J. Clin. Path.* 14: 67 (Feb.) 1944.

PSEUDO-GAS GANGRENE OF THE HAND

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Aeriform infections of the hand of industrial origin, unrelated to the usual gas producing anaerobes, have not been previously described in this country. Recently 3 cases presenting such a syndrome were reported from two plants where an alloy containing 90 per cent magnesium was being utilized in manufacturing processes. Gas bacillus infection was the initial diagnosis in each instance and therapy with gas gangrene antitoxin had been instituted. Bacteriologic studies did not, however, reveal the presence of gas forming anaerobes. In all 3 cases the appearance of the infection followed an accidentally incised wound received shortly after handling magnesium. Fortunately radical surgical procedures were not performed.

Study of the possible hazards associated with the use of magnesium was stimulated by the recently increased demand for this metal throughout the aircraft manufacturing industry. These studies disclosed that an alloy containing at least 89 per cent magnesium, when introduced beneath the skin of rats, produced macroscopic tumor masses.¹ This phenomenon occurred when as little as 10 mg. of powdered magnesium was injected.² These observations were confirmed by Schulz and Walter.³ Both groups of workers found that at least a portion of the gas produced in this manner was hydrogen.

It has been known for some time that, in human beings, contact of magnesium with body fluids and tissues stimulates the evolution of gas. Seelig⁴ in 1924 noted that gaseous cysts formed about magnesium when this metal was used as suture material in certain operative procedures. The more recent investigations demonstrated that powdered magnesium produced larger tumors than spicules of this metal.² Subcutaneous injection of aluminum and alloys containing less than 89 per cent magnesium was not followed by formation of gas in animal tissues.¹

PURPOSE AND METHODS

The purpose of this study is to present the clinical manifestations of a syndrome which may simulate gas gangrene. The nature of the causative agent is unknown. However, bearing in mind the evidence acquired by animal research and the occurrence of all 3 cases in an environment where finely powdered magnesium was plentiful, the possibility is suggested that this metal constitutes a significant factor in the etiology. Irrespective of its cause, the signs and symptoms present a well defined clinical entity which must be differentiated from gas bacillus infections. Confusion of these conditions may give rise to serious consequences.

1. McCord, C. P.; Prendergast, J. J.; Meek, S. F., and Harrold, G. C.: Chemical Gas Gangrene from Metallic Magnesium, *Indust. Med.* 11: 71-76 (Feb.) 1942.

2. Meek, S. F.; Prendergast, J. J.; Harrold, G. C., and McCord, C. P.: Physiological Action of Metallic Magnesium, *J. Indust. Hyg. & Toxicol.* 24: 142-147 (June) 1942.

3. Schulz, R. Z., and Walter, C. W.: Magnesiogenous Pneumogranuloma, *J. Indust. Hyg. & Toxicol.* 24: 148-153 (June) 1942.

4. Seelig, M. G.: Study of Magnesium Wire as Absorbable Suture and Ligature Material, *Arch. Surg.* 8: 669-677 (March) 1924.

In addition to the clinical description of the syndrome, certain bacteriologic studies were performed. Cultures were taken of the lesions, of cutting oils and of tools and machines used by the patients. Samples of powdered magnesium found on the lathes and other machines were also examined bacteriologically.

Cultures were grown both aerobically and anaerobically. After isolation in pure culture, identification of individual organisms was carried out as completely as possible.

RESULTS OF BACTERIOLOGIC STUDIES

Not a single organism of the gas forming anaerobes was isolated either from lesions of the patients or from materials and tools used at the plants. A *Staphylococcus aureus* was recovered from the operative wound of patients 1 and 3. Cultures of 1 of these (patient 3) had been negative until several incised areas became secondarily infected. Cultures from the incision of the third patient were negative both at operation and during the subsequent course.

A greater variety of organisms was cultured from the soluble than the insoluble oils, as shown in the table.

Bacteria Isolated from Machine Shop Materials

Material Cultured	Organism Isolated	Number of Specimens from Which Isolated
Insoluble oil (4 specimens)	<i>Staphylococcus albus</i>	2
	Gram negative chromogenic bacilli (orange)	1
	Gram positive nonsporulating bacilli	1
	Aerobic spore-bearing bacilli	1
Soluble oil (4 specimens)	Gram negative lactose-fermenting bacilli	3
	Gram negative fluorescent bacilli of the family <i>Pseudomonadaceae</i>	3
Magnesium (2 specimens)	Aerobic spore-bearing bacilli	2
	<i>Staphylococcus albus</i>	1
	Gram negative lactose-fermenting bacilli	1
	<i>Streptococci</i> , green producing on blood agar and fermenting lactose and mannite	1
Table grinding mill	Aerobic spore-bearing bacilli	1
	Gram negative lactose-fermenting bacilli	1
Sarno lathe	Gram negative lactose-fermenting bacilli	1

Bacteria belonging to the family *Pseudomonadaceae* were the most frequent contaminants of the soluble oils. Lactose fermenting bacteria were also demonstrated in these oils. Several varieties of bacteria were recovered from the insoluble oils.

REPORT OF CASES

CASE 1.—History.—F. O., a white woman aged 32, admitted to the hospital on Nov. 13, 1943 complaining of swelling and a "feeling of numbness" of the right ring finger and hand, had been perfectly well until 12:50 a. m. on the morning of the day of admission.

While she was employed as a lathe operator, a magnesium adapter with which she was working slipped and lacerated the dorsum of the right ring finger.

The laceration, which occurred over the dorsum of the distal phalangeal joint, was about one-half inch in width and bled freely. First aid was administered by the plant nurse. At 3 a. m. the patient noticed that the finger had swollen considerably and that the swelling had spread to the back of the hand. At 2 p. m. on the same day, alarmed by the swelling and dull pain in the finger and hand, she consulted her physician. By this time the swelling involved the entire dorsum of the hand. The physician advised immediate hospitalization.

The patient had been working for some time with an alloy containing 90 per cent magnesium. Not infrequently her hands came in contact with fine particles of this material, which were difficult to remove because of the presence of cutting oils.

Her temperature on admission was 99 F. and pulse rate 100. Examination of the right hand revealed considerable swelling

of the dorsum of the ring finger and hand, where there was crepitation. On palpation of the hand there was a peculiar sensation described by the examining physician as "crushed egg shells in a cloth bag." Physical examination was otherwise negative.

Laboratory examination revealed a red blood cell count of 4,100,000 and hemoglobin 84 per cent (Sahli). The white blood cell count was 6,600 and the blood smear revealed polymorphonuclears 52 per cent, lymphocytes 40 per cent, monocytes 3 per cent and eosinophils 5 per cent. Urinalysis was negative. Cultures of the hand taken at the time of operation revealed a hemolytic *Staphylococcus aureus* and a gram negative bacillus.

Course.—With a diagnosis of gas bacillus infection, operation was performed at 6 p. m. Although amputation had been suggested by a consultant, surgery was limited to two linear incisions over the dorsum of the hand, each about 4 inches in length. There was a perceptible decrease in the amount of swelling after the incision. The wound was irrigated with peroxide and diluted solution of sodium hypochlorite. The patient received 10,000 units of tetanus antitoxin on admission and, in addition, 45,000 units of gas gangrene antitoxin over a period of three days. She also received a total of 23 Gm. of sulfathiazole in five days.

Postoperatively the temperature rose to 101.6 F. and remained elevated for two days, following which it was normal. The patient complained of pain in the hand and wrist. There was some stiffness of the fingers. On November 22, under sodium pentothal anesthesia, the edges of the wound were approximated and closed with Michel clamps. Except for some residual stiffness of the third, fourth and fifth fingers of the right hand, convalescence was uneventful.

CASE 2.—History.—J. A., a white man aged 23, married, admitted to the hospital on Feb. 28, 1944, complained of pain and swelling of the left ring finger and hand. About 2 p. m., while reaming a coil on a lathe, he lacerated the tip of the left ring finger. He had been tooling objects made of 90 per cent magnesium. During the course of his work, his hands and the lathe usually became covered with fine magnesium particles. Ten minutes after the laceration he noted that his finger had become swollen and painful. He could not remove a ring worn on the cut finger. The pain became so severe that he had to leave his work. The plant nurse suggested that he consult his family physician. At 2:40 p. m., when he visited his doctor, the swelling had progressed to the dorsum of the hand as far as the wrist; his hand was now as large as a "boxing glove." The family physician made a tentative diagnosis of gas bacillus infection and advised hospitalization.

The temperature on admission was 99.2 F. and the pulse rate 100. The physical examination revealed that the patient, who was fairly well developed, was in a great deal of pain. Examination of the hand revealed a small laceration over the tip of the left ring finger. The finger and hand were swollen to the wrist. There was crepitation over the dorsum of the hand and ring finger.

Laboratory Examination.—The red blood cell count was 3,900,000, hemoglobin 78 per cent (Sahli) and white blood cell count 16,700. The blood smear showed polymorphonuclears 93 per cent, lymphocytes 7 per cent. Urinalysis was negative. Blood cultures on February 29 and March 1 were negative. Cultures taken of the hand at operation revealed no growth.

Course.—The patient was given 30,000 units of gas gangrene antitoxin and was started on sulfathiazole (total dosage 12 Gm. in forty-eight hours). Operation was performed at 5 p. m. on the day of admission. Three linear incisions were made over the dorsum of the hand extending from the knuckles to just above the wrist. An additional linear incision was made on the ventral surface of the palm, and "through and through drainage" was instituted. There was a definite decrease in the amount of swelling immediately after incision.

During the subsequent course there was no evidence of spread beyond the operative incision. The temperature rose to 103 F. immediately after the operation and remained elevated for forty-eight hours. Thereafter, except for a slight rise to 99 F. on the fifth hospital day, it was normal. The pulse rate was

about 100 for five days. On March 2 the patient developed an infection of the mucous membrane of the mouth and tongue. On March 6 the drains were removed. Five days later, under anesthesia, the wounds were closed with Michel clips. Convalescence was uneventful. The wounds healed without difficulty. The patient was discharged from the hospital on March 18, 1944.

CASE 3.—History.—M. S., a white man aged 38, married, a machinist, admitted to the hospital on Sept. 23, 1944, complained of pain and swelling of the left hand and arm. About 6:45 p. m., while at work, a file slipped and punctured his left thumb. For two or three hours prior to the accident he had been "setting up" machines on which objects made of a 90 per cent magnesium alloy were being tooled.

The point of the file penetrated the skin, and there was a moderate amount of bleeding. Despite the injury, he continued at his work. About ten minutes later he noticed a feeling of numbness of the hand. Tapping the back of his left hand with the right caused a peculiar sensation which he described as "air in a football." When he consulted the plant nurse for first aid, she also expressed the opinion that there was air beneath the skin and advised that he see his doctor. He arrived at his physician's office about 7:45 p. m., approximately one hour later. At this time the swelling had progressed beyond the dorsum of the hand to the arm. His physician advised immediate hospitalization. The swelling continued to spread; at 10:30 p. m. it had reached a point 2 inches below the shoulder.

The temperature on admission was 98.8 F., the pulse rate 80 and the respiratory rate 16. Physical examination showed that the patient was well developed and well-nourished and that his general appearance was good. The dorsum of the left hand, thumb and arm was swollen. There were tenderness and crepitation throughout the arm. In some areas bubbles beneath the skin felt "as large as eggs." Except for the palm, there was crepitation of the entire left extremity.

Laboratory Examination.—The red blood cell count on September 24 was 4,050,000, hemoglobin 85 per cent (Sahli). The white blood cell counts rose from 10,000 on September 23 to 47,000 on September 29 and gradually dropped to 7,600 on October 9. The blood smear showed a gradual rise of polymorphonuclears from 76 per cent on September 23 to 95 per cent on September 30 and then gradually dropped to 50 per cent on October 9. Blood cultures on September 27, September 30 and October 4 were negative. Urinalyses were negative except that occasionally there was the slightest possible trace of albumin. Cultures of the hand at operation revealed no growth. On October 4 cultures of the wound were positive for hemolytic *Staphylococcus aureus*.

Course.—Operation was performed at 11 p. m. (four and one-half hours after injury). Under sodium pentothal anesthesia numerous incisions (about twenty-two) were made from a point just below the shoulder to the dorsum of the hand. The incisions varied from 2 to 6 inches in length and extended through the skin, fat and superficial fascia to the muscles and tendons. The surgeon noted very little resistance to the scalpel. After incision the swelling subsided to a great extent. Dakin tubes were inserted into the wounds and kept in place by sutures. The wounds were irrigated with peroxide.

The temperature remained normal until the second postoperative day, when it rose to 100 F. and remained elevated until September 27. Subsequently the temperature remained normal until October 5, when there was a slight elevation which lasted about forty-eight hours. The pulse was not high throughout the entire course.

During the first three days of his hospital stay the patient received 30,000 units of gas gangrene antitoxin. On September 23 he was given 30,000 units of penicillin and thereafter he received 20,000 units, intramuscularly, every three hours until September 28. On September 29 the dosage was reduced to 10,000 units every three hours. Sulfadiazine therapy was instituted on September 24, and the patient received 1 Gm. every four hours until September 27.

On September 29 the patient developed herpes of the nose, lips and left cheek. Several of the wounds had become secondarily infected, and there was a moderate amount of purulent drainage. On October 7 all drains had been removed and, under sodium pentothal anesthesia, the wounds were closed with Michel clips. Recovery was uneventful thereafter, and the patient was discharged on October 18 with full use of his arm.

COMMENT

The similarity in the symptomatology and clinical course of the 3 cases is apparent. Of interest is the rapidity with which swelling and crepitation appeared subsequent to the rather trivial injury sustained by each patient. In all 3 cases swelling was noted after an interval of only ten minutes. In 2 cases (2 and 3) crepitation was found by the attending physician one hour after injury.

Of the 3 patients 2 (F. O. and M. S.) had been employed in the same plant. In each instance a superficial laceration had occurred after handling powdered magnesium (a 90 per cent alloy). In 1 case the injury was caused by an object made of this metal.

The rapid accumulation of gas beneath the skin of these patients suggests that a chemical may have been the responsible agent. The studies previously mentioned have demonstrated that the rapidity with which gas appears beneath the skin subsequent to injections of powdered magnesium varies a great deal, depending on the species of animal used in the experiment.¹ In rats, for example, this phenomenon occurs more readily than in guinea pigs. Schulz and Walter in their experiments noted the appearance of gas bubbles fifteen minutes after the subcutaneous injection of powdered magnesium. It is questionable whether any known bacterial agent, acting independently, would have been capable of producing local reactions with such rapidity.

Although gas gangrene had been suspected in each of the 3 cases, subsequent study eliminated this diagnosis. The injury which precipitated the syndrome in all 3 patients did not produce extensive laceration or damage to muscle tissue. It is well known that gas gangrene usually develops in a deep, punctured or lacerated wound which extends into muscle and carries with it such foreign bodies as clothing, powder or debris. The constitutional reaction, which is usually severe in gas bacillus infection, was insignificant in these cases. One patient (M. S.) had a normal temperature on admission in spite of involvement of almost the entire arm. The course remained afebrile until the second postoperative day, when several of his wounds became septic. Similarly, a prolonged elevation of temperature was not shown by either of the other 2 cases.

The syndrome discussed in this paper may also be confused with hemolytic streptococcal gangrene described by Meleney.⁵ In this condition too a superficial injury is usually the precipitating factor and subcutaneous tissues are involved in the pathologic picture. However, tumor masses and crepitation do not occur and the rate of spread from the point of injury is less rapid than was observed in these cases. Blisters and bullae develop late in the course of hemolytic streptococcal gangrene.

The bacteriologic studies did not reveal an organism common to all 3 patients. Similarly, cultures of cutting oils and other materials revealed several organisms apparently unrelated to the etiology of this syndrome. Further studies are being carried on with these bacteria.

5. Meleney, F. L.: A Differential Diagnosis Between Certain Types of Infectious Gangrene of the Skin, Surg., Gynec. & Obst. 56: 847-865 (May) 1933.

It may be postulated that a bacterial agent, acting synergistically with the magnesium alloy, may have been responsible for the syndrome. It has, however, been shown that in animals tumor masses may be produced by the injection of sterile magnesium. Further research will determine whether the pathologic process may be accelerated by the presence of certain bacteria in addition to the magnesium.

Whether or not the powdered magnesium alloy is the etiologic agent, this syndrome must be borne in mind in the differential diagnosis of infection characterized by the presence of gas beneath the skin. It is hoped that this discussion will be helpful in bringing other similar cases to light.

SUMMARY

1. Three cases of a new syndrome characterized by the rapid appearance of subcutaneous gas tumor masses within a few minutes after a superficial laceration of the hand occurred in two plants where an alloy composed of 90 per cent magnesium was being used. Each patient had handled this material in a finely powdered form prior to the occurrence of injury.

2. It is possible that an etiologic relationship of this alloy to the syndrome exists.

3. Because this syndrome may simulate gas gangrene, it is important that its clinical characteristics be borne in mind in order that unnecessary surgical procedures may be avoided.

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VESICoureTERAL REFLUX ACCOMPANIED BY RENAL COLIC

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The occurrence of vesicoureteral reflux has been recognized for many years. Importance has been attached to its significance as an etiologic factor in upper urinary tract infection and renal damage secondary to back pressure. Extensive studies were made by Graves and Davidoff¹ in this connection, using rabbits and dogs. Their principal clinical interest was in connection with its relation to upper urinary tract infections. It was not until 1934 that the role of vesicoureteral reflux in the production of renal colic was forcefully brought to attention by Lewis and Carroll,² who presented 30 cases of symptomatic vesicoureteral reflux. All cases described by them were secondary to vesical neck or urethral obstruction, and the symptomatology described was characterized by typical renal colic, occurring usually in the presence of a distended bladder, when the patient attempted to void. Individual cases were presented by several other authors in connection with their article. Little has been written since that time concerning this clinical syndrome, and it is felt that attention should again be directed to this condition, particularly with reference to its occurrence in cases of stones in the lower ureter

after operative manipulation for their removal. That vesicoureteral reflux occurs with considerably more frequency than is ordinarily suspected is emphasized



Fig. 1.—Vesicoureteral reflux in left ureter.

by Aschner,³ who reported its presence in 14 per cent of 202 cases in which cystograms were made.

The value of a cystogram, taken after voiding, in the diagnosis of vesicoureteral reflux is clearly demonstrated

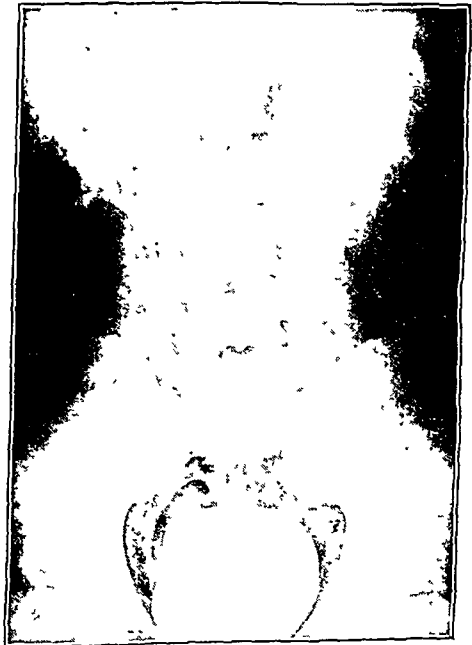


Fig. 2.—Vesicoureteral reflux in right ureter and kidney pelvis.

in 1 of our patients. This procedure was described by Bartrina,⁴ who recommended the use of cystograms taken while the patient was voiding for the demonstra-

1. Graves, R. C., and Davidoff, L. M.: Studies on the Ureter and Bladder, with Especial Reference to Regurgitation of the Vesical Contents, *Tr. Am. A. Genito-Urin. Surgeons* 10: 25-71, 1923.

2. Lewis, Bransford, and Carroll, Grayson: Further Clinical Evidences on Regurgitation Renal Colic, *Urol. & Cutan. Rev.* 38: 185-189 (March) 1934.

3. Aschner, P. W.: Vesicoureteral Reflux in Cystography, *Am J. Surg.* 4: 448-449 (April) 1928.

4. Bartrina, Jose: Some Considerations on Insufficiency of the Vesico-ureteral Valve, *Urol. & Cutan. Rev.* 39: 167-172 (March) 1935.

tion of reflux. My associates and I have followed his technic with some modification, namely filling the bladder with opaque solution, taking an x-ray, having the patient void and then taking a second film.

The etiologic factors involved in the production of vesicoureteral reflux may be divided into three groups as described by Cace:⁵ (1) produced by (a) mechanical causes obstructing flow at the vesical neck and producing dilatation upward, (b) alterations of the ureteral orifice due to chemical causes, postoperative cicatrices, chronic inflammatory lesions such as tuberculosis, or cancer involving the ureteral orifice; (2) dynamic, produced by nerve lesions involving the cauda equina, and (3) congenital malformations, with special emphasis on obstruction at the vesical neck due to urethral valves. Vermooten and Neuswanger⁶ were able to produce vesicoureteral reflux in dogs by incision of the ureterovesical valve. They observed that actual

dition occurred rarely when normal ureterovesical valves were present. Prather¹⁰ recently described a case following extensive injury to the bladder and posterior



Fig. 3.—Same case as figure 2 after voiding. Note increased filling of ureter and pelvis.

dilatation of the upper tract resulted only when there was both an infected urine and a ureteritis.

Henningsen⁷ presented 28 cases of various lesions of the genitourinary tract in which x-ray studies had been made with the finding of reflux in 4 cases, 3 with prostatic hypertrophy, 1 with tuberculous cystitis. Verrière⁸ presented 3 cases of vesicoureteral reflux occurring following the accidental injection of caustic solutions into the bladder. Dietel⁹ discussed ureteral reflux in connection with pregnancy, with particular reference to its relation to pyelitis. He was unable to demonstrate its presence in any of 50 cases studied by cystography, and his conclusion was that the con-



Fig. 4.—Regular cystogram demonstrating complete absence of dye in ureter and kidney pelvis, except for small shadows in minor calices.

urethra with cure following operative intervention. None of these authors made any mention of renal colic as occurring with ureteral reflux.



Fig. 5.—Same patient as figure 4 immediately after voiding, showing complete filling of ureter and pelvis.

We have had 2 cases with typical renal colic resulting from vesicoureteral reflux:

A white man aged 45 was found to have a calculus, 8 by 12 mm in size, lodged within the left ureteral orifice, producing

5. Cace, M. Clinical and Roentgen Study of Vesicoureteral Reflux, with Report of 7 Cases, *Policlinico (sez. chir.)* **46**: 53-63 (Feb.) 1929.

6. Vermooten, Vincent, and Neuswanger, C. H. Effects on the Upper Urinary Tract in Dogs of an Incompetent Uterovesical Valve, *J. Urol.* **32**: 330-334 (Oct.) 1934.

7. Henningsen, O. Clinical and Experimental Study of Possibilities of Vesicoureteral Reflux, *Ztschr. f. Urol.* **31**: 505-521, 1937.

8. Verrière, P. Forced Ureters. Uterovesical Reflux After Penetration of Caustic Fluid into Bladder. Three Cases, *Bull. Soc. franc. d'Urol.* June 20, 1938, pp. 222-230.

9. Dietel, H. Regurgitation from Bladder. *Zentralbl. f. Gynäk.* **63**: 998-1005 (May 6) 1939.

10. Prather, G. C. Vesicoureteral Reflux. Report of Case Cured by Operation, *J. Urol.* **52**: 437-448 (Nov.) 1944.

severe left renal colic. Ureteral meatotomy was performed by means of a cystoscopic scissors and two days later the calculus was passed. Convalescence was uneventful except that the patient began to complain of severe pain in the left kidney region posteriorly, occurring with a full bladder and immediately relieved by voiding. The bladder showed mild trabeculation, and there was a slight degree of prostatic encroachment at the vesical neck. There was no residual urine. A cystogram was made with 500 cc. of skiodan, and a definite reflux in the lower portion of the left ureter was demonstrated (fig. 1).

A white man aged 29, with a diagnosis of right renal calculi made six months prior to admission, presented a typical renal colic on the right side, and a calculus, 2 by 5 mm. in size, was lodged in the right ureter approximately 1.5 cm. above the ureterovesical junction. Conservative treatment was instituted for a period of over two months, including a ureteral meatotomy performed with a Moore electrotome, and repeated ureteral dilations. The stone resisted all efforts at removal, and a ureterolithotomy was performed. The location of the stone was such that there was unquestionably some damage to the ureterovesical junction during its removal. Postoperative convalescence was uneventful. About one month after operation the patient began to complain of pain in the right kidney region and right abdomen, anteriorly, coming on near the end of urination. Because of the characteristic location of the pain and the clinical history, vesicoureteral reflux was suspected and a cystogram was made with 300 cc. of 10 per cent skiodan. A film was taken, which presented a complete filling of the ureter and pelvis on the right side (fig. 2). The patient was then instructed to empty his bladder partially, and a second film was made (fig. 3). During this process the typical pain of which he complained was reproduced. It is noteworthy that in the second film there was considerably more filling of the calices and definite dilatation of the ureter with some angulation. This was undoubtedly brought about by transmission of bladder pressure up the ureter during voiding. This phenomenon demonstrates the finding of Graves and Davidoff that, with regurgitation, the bladder pressure is transmitted directly to the kidney pelvis, the two structures being in open communication. Furthermore, the reason for the appearance of symptoms near the end of urination is clearly brought out, because at this point maximum dilatation of the ureter and kidney pelvis was obtained. Four months later the patient was studied again. In the interval there had been a moderate degree of improvement in symptomatology and, although the symptoms were less pronounced, there was still some pain in the kidney region at the end of urination. The bladder was filled with 550 cc. of 10 per cent skiodan and an x-ray made (fig. 4). Only a few small shadows in the region of the minor calices of the kidney appeared. There was no filling of the ureter or kidney pelvis. The patient was then instructed to void, and a second film was made after the bladder was almost empty (fig. 5). At this time complete filling of the ureter and pelvis was present. This series presents clearly the value of cystograms taken after voiding in the demonstration of this condition and shows that its presence may be overlooked by using a routine cystogram alone.

CONCLUSIONS

Vesicoureteral reflux occurs more frequently than one would suppose and does produce definite kidney colic in some instances. Its presence should always be suspected in cases of renal colic, particularly in association with obstruction at the vesical neck when no stone is demonstrated.

Operative manipulation on the lower ureter with subsequent damage to the ureterovesical valve is occasionally followed by vesicoureteral reflux.

The employment of a cystogram made after the patient has voided, rather than the use of simple filling of the bladder with a contrast medium, is of definite value in demonstrating this condition.

ARACHNOIDITIS AND PARALYSIS FOLLOWING SPINAL ANESTHESIA

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The literature has many reports of sequelae involving the nervous system after spinal anesthesia. These have been disturbances in sensation, stiff neck, cranial nerve involvement (second, third, fourth, sixth, seventh, eighth and twelfth), impaired bladder and rectal function, hemiplegia and paraplegia, pyramidal tract degeneration, meningoencephalitis, polioencephalitis, myelitis, myelopathy, radiculitis, severe "neuritis," septic and aseptic meningitis, arachnoiditis, cauda equina neuritis and others.¹

Falk² reported headache and stiff neck lasting several days in about 6 per cent of persons after spinal anesthesia. This he regarded not as a complication but as a normal result of spinal anesthesia. More seriously, meningitis has been often reported after spinal anesthesia.³ In 8 cases of so-called aseptic meningitis there were three deaths;⁴ the others were "benign" and recovered. In that series, symptoms began sixty hours after the anesthetic had entered the subarachnoid space. There was an increase of lymphocytes in the spinal fluid which disappeared slowly; such a pathologic picture is quite different from the chronic progressive fibrinous arachnoiditis to be reported now. Hammes⁵ described 8 cases with neurologic signs following spinal anesthesia; of these 2 were labeled "chronic arachnoiditis." This diagnosis was a clinical impression supplemented in one case by iodized oil x-ray studies and was not confirmed by operation.

The only verified case of localized arachnoiditis thus far reported was described by Haynes and Smith.⁶ Their patient had signs of cervical cord involvement four days after injection of a pontocaine glucose solution into the lumbar subarachnoid space. Two months later a cervical laminectomy was done; adhesions were found between the arachnoid and cervical cord covering the anterior and posterior nerve roots of the second, third and fourth cervical segments. Some of the adhesions were lysed and improvement followed.

Death has followed spinal anesthesia from involvement of the nervous system. Its incidence in three series has been reported as (a) 5 in 120,000 cases,⁷

From the Neurological Service of Bellevue Hospital.

1. Kamman, G., and Baker, A. B.: Damage to Spinal Cord and Meninges Following Spinal Anesthesia, *Minnesota Med.* **26**: 786-791 (Sept.) 1943. Koug, F.: Bleibende Rückenmarkslähmung nach Lumbalanästhesie, *München, med. Wchnschr.* **53**: 1112-1113 (June 5) 1906. Koster, H., and Weinrah, M.: Complications of Spinal Anesthesia, *Am. J. Surg.* **8**: 1165-1179 (June) 1930. Light, Sweet, Livingstone and Engel.³ Livingstone, Wellman, Clark and Lambros.⁴ Tihen.⁵

2. Falk, H. C.: Deaths from Spinal Anesthesia, *Am. J. Surg.* **11**: 461-464 (March) 1931.

3. Light, G.; Sweet, W. H.; Livingstone, H., and Engel, R.: Neurological Changes Following Spinal Anesthesia, *Surgery* **7**: 138-156 (Jan.) 1940. Tihen, H. N.: Aseptic Meningitis Following Spinal Anesthesia, *J. Kansas M. Soc.* **38**: 100-101 (March) 1937. Campbell, H. E.: Aseptic Meningitis: Another Hazard in Spinal Anesthesia, *Chinese M. J.* **49**: 119-131 (Feb.) 1935. Hammes.⁵ Haynes and Smith.⁶ Brock, Bell and Davison.¹⁰

4. Livingstone, H.; Wellman, V.; Clark, D., and Lambros, V. S.: So-called "Aseptic or Chemical Meningitis" Surg., Gynec. & Obst. **77**: 216-218 (Aug.) 1943.

5. Hammes, E. M.: Neurological Complications Associated with Spinal Anesthesia, *Minnesota Med.* **36**: 339-345 (April) 1943.

6. Haynes, W. G., and Smith, F. A.: Cervical Arachnoiditis Occurring After Spinal Anesthesia, *Anesthesiology* **2**: 444-447 (July) 1942.

7. Angelesco, C., and Tzavaru, S.: Some Remarks on the Mortality in 120,500 Cases of Spinal Arachnoiditis, *Presse méd.* **41**: 1904-1906 (Nov. 25) 1933.

(b) none in 250,895 cases⁸ and (c) 3 in 4,010 cases.⁹ In the first series the cause of death was meningitis, septic and aseptic. In the last series death was ascribed to "spinal shock." On autopsy such cases have decidedly thickened meninges and clear evidence of myelopathy. Those cases are much more severe than ours: apparently there was a primary involvement of the spinal cord and a secondary morbid process in the meninges.

REPORT OF CASES

CASE 1.—B. R., a woman aged 51, a housewife, admitted to the neurologic service of Bellevue Hospital on May 24, 1944, was in good health until the early part of 1941, when she was found to have a fibromyoma of the uterus. On April 17, 1941 hysterectomy was done under spinal anesthesia. The anesthetic agent was 125 mg. of procaine. The immediate postoperative course was uneventful and she was discharged from the hospital eleven days after the operation. Four days later she noticed numbness and weakness of the lower extremities and difficulty in walking. These symptoms became gradually worse despite massage and "chiropractic treatment." In the early part of 1943 the left foot dragged on walking. There was stiffness of the left leg in January 1944. This grew worse; by March there was added pain in the upper back and shoulder girdle radiating to the hands. The patient then became incontinent of urine and feces.

On admission the general physical status was normal. However, she had slightly irregular pupils, the left larger than the right, spastic paraparesis of the lower extremities, atrophy of the peroneal muscles of both legs without fibrillations, absent abdominal reflexes, overactive knee jerks and occasionally clonus. The Babinski sign was positive on both sides. Sensory examination revealed diminution to pin prick below the first lumbar spinal segment, more pronounced on the right, diminution to hot and cold sensation below the second lumbar segment, impaired vibration sense below the third lumbar segment and impaired position sense in the toes. The perianal zone was spared. A lumbar puncture was done; the initial pressure was 120 mm. of spinal fluid. Jugular compression produced a slow rise in pressure; when the pressure was released the spinal fluid level fell slowly, indicating a partial block. The fluid contained 90 mg. of protein per hundred cubic centimeters of fluid and 3 lymphocytes per cubic millimeter. The Wassermann reaction was negative and the colloidal gold curve flat.

A preoperative diagnosis of "arachnoiditis secondary to spinal anesthesia" was made. Laminectomy was done on June 27, 1944: an obstructive arachnoiditis around the twelfth thoracic spinal segment was found. A soft rubber catheter was used to break up the adhesions and relieve the block. After operation the patient had a low grade fever for eight days. There was gradual improvement in her symptoms and she was able to void spontaneously on the eighteenth postoperative day. During the remaining twelve days of her hospitalization the patient received baking and massage.

A letter from the patient dated Sept. 25, 1944 states that she "can move her legs much more freely and can stand on her feet for a few minutes at a time."

This case history demonstrates two features: 1. The symptoms did not occur after operation until the patient had left the hospital; since she had completely recovered from the hysterectomy, she failed to correlate her paralytic complaints with any preceding surgical procedure. 2. The surgeon and the anesthetist were never informed by the patient of the postoperative complication.

CASE 2.—J. M., a man aged 50, a lithographer, admitted to the neurologic service of Bellevue Hospital on July 25, 1943, had been in good health until April 8, 1943, when a bilateral inguinal herniorrhaphy was done under spinal anesthesia. The

anesthetic agent was 10 cc. of eucupine with procaine. There were no immediate postoperative complications and the patient was discharged from the hospital twenty-one days after operation. A few days later he complained of weakness of the lower extremities and of a dull pain in the low back area, radiating to both buttocks. These pains became progressively worse; in a few days more he noted pins and needles sensation in his feet. His condition deteriorated so that a week before coming to Bellevue Hospital he could not walk without support and passed urine with difficulty.

The general physical status was normal except for carious teeth, bilateral herniorrhaphy scars and weakness of the rectal sphincter tone. However, both legs were very weak, especially the peroneal muscles; there was foot and toe drop on both sides. The upper abdominal reflexes were depressed, the lowers absent. The knee and ankle jerks were more active on the right. The Babinski sign was present on the right and was equivocal on the left. There was unsustained ankle clonus on the right. Sensory examination revealed diminished appreciation of pain and temperature below the first lumbar spinal segment. Vibration sense was impaired at the hip and absent below the knees. Position sense was lost in the right foot and impaired in the left. The sacral area was spared. Several attempts at lumbar puncture failed to produce any spinal fluid. The blood Wassermann reaction was negative; blood count and urine were normal. X-ray examination showed no abnormality of the lumbar spine.

A preoperative diagnosis was made of "adhesive arachnoiditis secondary to spinal anesthesia." Laminectomy on Aug. 5, 1943 revealed adhesions completely encircling the conus medullaris. The nerve roots of the cauda equina were enmeshed by these fibrous bands. Lysis was performed wherever possible and free flow of spinal fluid established below the site of the adhesions. After operation the patient had many episodes of cystitis; these were controlled by Munro tidal drainage. Four months later the chronically ill patient was transferred to the Goldwater Memorial Hospital for further care. A report on Sept. 10, 1944 states that he has had some slight return of function in the lower extremities; he is still greatly disabled.

This case resembles the first in that symptoms did not occur till the patient had left the hospital. The anesthetist and the surgeon were alike unaware that their patient was suffering from severe sequelae of the spinal anesthesia, which they had recorded as being without complication.

CASE 3.—T. B., a man aged 29, a practical nurse, admitted to the neurologic service of Bellevue Hospital on Jan. 11, 1944, had been well till May 3, 1943, when he complained of sharp abdominal pain and was taken to the Jersey City Medical Center; there a diagnosis of acute appendicitis was made. Appendectomy was done under general anesthesia. The postoperative course was stormy; a septic type of fever frequently reached 104 F. Twenty-three days after operation the patient left the hospital against advice and was admitted to the Hospital of the United States Maritime Service Training Station at Sheepshead Bay. There he continued to have high fever; he complained of severe abdominal pain. A gastric x-ray examination revealed the appearances of a perforating ulcer.

On June 3, 1943 an exploratory laparotomy for a suspected perforating gastric ulcer was done under continuous spinal anesthesia. The anesthetic agent was metycaïne; 2 cc. of a 10 per cent solution was diluted to 10 cc. with spinal fluid and given in fractional doses. Anesthesia was satisfactory except that at one time the patient complained of difficulty in breathing. An intratracheal tube was inserted and oxygen administered. Later, when the spinal needle was dislodged, the anesthesia was supplemented with cyclopropane and ether. Following operation, the patient's condition was good. On the fifth day fever recurred and he was unable to pass urine. Further, there was found paralysis of both lower extremities. The signs of spinal cord involvement spread upward to include the clavicular level and both upper extremities.

Three weeks after the operation the patient was completely paralyzed in the lower extremities and at times complained

8. Babcock, M. E.: Spinal Anesthetic Deaths: A Survey, *Anesth. & Analg.* 11:184-188 (July-Aug.) 1932.

9. Lyford, J.; Berger, O., and Schumacher, H. B.: An Analysis of Deaths in the Operating Rooms of the Johns Hopkins Hospital, with Special Reference to Those Occurring Under General and Spinal Anesthesia, *Bull. Johns Hopkins Hosp.* 70:488-503 (June) 1942.

of pains and tingling sensations in the arms and fingers. Within several weeks he began to regain some motion of the lower extremities so that he could walk with help. On discharge from the Maritime Service Hospital the patient was described as having a typical ataxic gait, without reflexes in the lower extremities.

On Dec. 17, 1943 he suffered burns of both knees as he leaned against a radiator. There was anesthesia of the lower extremities, and he lacked any appreciation of temperature. The burns were dressed in the emergency ward of Bellevue Hospital and subsequently elsewhere. The right knee became reddened and swollen; a week later the patient had stiffness of the neck and face and much difficulty in swallowing. On Dec. 24, 1943 he was admitted to Bellevue Hospital; here he was found to have tetanus. He received 420,000 units of tetanus antitoxin. Improvement was rapid and progressive. On Jan. 10, 1944 he was transferred to the neurologic service for study.

He was a well made man. General physical examination was negative except for the scars of burns and operations. There was a flaccid paralysis of both lower extremities. There was thinning of the hands attributed to disuse, as strength of the arms and grip was good. The deep tendon reflexes of the upper extremities were equally active; the upper abdominal reflexes were present, the lowers absent; the knee and ankle jerks were absent bilaterally. The Babinski sign was present on both sides. There was a loss of all forms of sensation below the ninth thoracic spinal segment. Coordination in the arm movements was good. The blood Wassermann reaction was negative; the urine and blood count were normal. Several attempts at lumbar puncture were made, but no fluid was obtained. On January 15 laminectomy from the fourth to the tenth thoracic spinal segments was carried out under general anesthesia. The dura was tightly adherent to the arachnoid and spinal cord; there was no free flow of spinal fluid. At the seventh thoracic segment a small calcified plaque was found in the arachnoid. Above the plaque a cystic tumor-like swelling of the cord was found, covered by tortuous veins. The dorsal columns were separated by blunt dissection but no cyst was encountered.

After operation there were paresthesias of the thighs and legs, and the sensory loss level receded from the ninth thoracic to the first lumbar segment. Motion of the legs improved. The postoperative course was complicated by a cystitis and epididymitis. He was given radiation therapy and was to have had a hip brace, but before it could be fitted he left against advice on the fifty-eighth postoperative day. At present the patient is at the United States Marine Hospital on Staten Island. His condition is unimproved.

Perhaps a postscript might be written here regarding a patient seen by one of us in private practice, referred by two of the best known medical men in the country as "neurotic":

Mrs. J. B., aged 49, complained of "shooting and tying up pains" around the body from below the breast to below the navel.

A hysterectomy had been performed three and one-half years before under spinal anesthesia. When the injection had been made, the arms and hands and legs went "numb and paralyzed," "the legs at once, the arms a few minutes later." She then began choking and stopped breathing. A pulmotor was used; she was brought back from the operating room to her bedroom and remained flat on her back for twelve hours. The arms and legs recovered power in about two hours, but "they all felt like chilblains for about ten hours longer." A new symptom appeared later, at which time "the left arm felt lame; there was pain in the forearm which occupied also the left inner fingers."

After hysterectomy she gained 50 pounds (23 Kg.) weight in five months and at the time of examination weighed 186 pounds (84 Kg.) in her underclothes. There was found severe hyperesthesia on the level of the fourth dorsal to the tenth dorsal segments on both front and back. She described the skin in this area as feeling "scalded." Her clothes were a great source of irritation.

The left knee jerk and left ankle jerk were present sharply without reinforcement. The right knee jerk and right ankle jerk were absent on reinforcement. In addition, she proved to have a bursitis over the head of the left radius.

The presence of deep reflexes on one side and their complete absence on the other was clear evidence of spinal cord morbidity, as was the radicular pain around her body in the same area in which there was a "scalding" increase of normal skin sensation.

COMMENT

Experimental and clinical studies have tried to determine the causes of neural symptoms after spinal anesthesia. Some of these are (1) technic, particularly in the lumbar puncture;¹⁰ (2) infection;⁷ (3) the chemotoxic effect of the anesthetic agent. Septic and aseptic meningitis¹¹ and even death¹² have been reported following diagnostic lumbar puncture, but complications after spinal anesthesia differ in kind and strength. So the introduction of a needle into the lumbar subarachnoid space would not seem to be the injurious factor in spinal anesthesia. Lundy,¹³ by a series of well controlled experiments on dogs, has made this clear.

Infection by an unknown organism has been insinuated by some investigators.⁷ This, they thought, might explain the "incubation" period prior to the onset of symptoms following spinal anesthesia. Of course, this might be possible. In one series¹¹ in which 11 of 96 patients operated on under spinal anesthesia developed septic meningitis, frank infection was the underlying factor.

The evidence for a chemotoxic effect of the anesthesia is ample. The investigations of Spielmeyer¹⁵ and Wassidlo¹⁶ as early as 1908 and Davis¹⁷ more recently have shown that in experimental animals the commonly used spinal anesthetic agents, when injected into the spinal subarachnoid space, produced (1) constant but varying degrees of leptomeningitis, (2) passive congestion of the ganglion cells of the gray matter, (3) swelling and fragmentation of the axis cylinders and (4) degenerative changes in the fiber tracts of the spinal cord. Burford,¹⁸ in his study on human tolerance for procaine, says that there is a tendency of the anesthetic agent to affinity for the immediately adjacent elements at the cord surface and within the cord structure itself. This gives rise to a picture like combined tract degeneration. Oddly enough, the leptomeningeal reaction stressed by Davis is not described by Burford.

Preexisting disease of the central nervous system has been shown to be a definite contraindication to spinal anesthesia.⁶ It is felt that the chemotoxic effect of the anesthetic agent aggravates the pathologic process; there is therefore need of careful neurologic examination of every patient before spinal anesthesia. Brock¹⁹

10. Hurxthal, L. M.: Sterile Meningitis Following Lumbar Puncture, *J. A. M. A.* **100**:1489 (May 13) 1933. Reynolds and Wilson,¹¹ Hammer.¹²

11. Reynolds, K. E., and Wilson, G.: Aseptic Meningitis Following Diagnostic Lumbar Puncture, *J. A. M. A.* **102**:1460-1462 (May 3) 1934. Hurxthal.²⁰

12. Hammer, F.: Case of Death from Spinal Meningitis Following Lumbar Puncture, *Dermat. Wehnschr.* **56**:467 (April 7) 1928.

13. Lundy, J. A.; Essex, H. E., and Kernohan, J. W.: Experiments with Anesthetics, *J. A. M. A.* **101**:1546-1550 (Nov. 11) 1933.

14. Barrie, H. J.: Meningitis Following Spinal Anesthesia, *Lancet* **1**:242-243 (Feb. 22) 1941.

15. Spielmeyer, W.: Veränderungen des Nervensystems nach Stovainanästhesie, München, med. Wehnschr. **55**:1629-1634, 1908.

16. Wassidlo, E.: Experimentelle Untersuchungen über Veränderungen des Niss'schen granula bei der Lumbaranästhesie, *Arch. f. klin. Chir.* **86**:1017-1053, 1908.

17. Davis, L.; Haven, H.; Givens, J. H., and Emmett, J.: Effects of Spinal Anesthesia on the Spinal Cord and Its Membranes, *J. A. M. A.* **97**:1781-1785 (Dec. 12) 1931.

18. Burford, G. E.: Tolerance of Humans for Procaine Injected into the Subarachnoid Space, *Anesthesiology* **3**:159-170 (March) 1942.

19. Brock, S.; Bell, H., and Davison, C.: Nervous Complications of Spinal Anesthesia: Clinical Study of Seven Cases and Tissue Study in One Instance, *J. A. M. A.* **106**:441-447 (Feb. 8) 1936.

feels that individual sensitivity may be needed to produce these reactions to spinal anesthesia, as few patients have central nervous system complications. Of course, such theorizing may well be the explanation for every pathologic process.

Hyslop,²⁰ in discussing Brock's paper, mentions 0.5 per cent as the incidence of complications after spinal anesthesia in his experience but adds that many men writing on spinal anesthesia have been ignorant of, and have therefore omitted, reference to sequelae that have occurred. This has been our experience.

SUMMARY

1. Three verified cases of spinal arachnoiditis and paralysis following spinal anesthesia were encountered.
2. Many surgeons and anesthetists are unaware that these sequelae exist because they appear after the patient has been discharged by the surgeon.
3. The gravity of possible spinal arachnoiditis and subsequent paralysis must enter into the meditations of surgeons and anesthetists when determining procedure.

410 East Fifty-Seventh Street

THE EFFECT OF VIVAX MALARIA ON SPINAL FLUID AND BLOOD SEROLOGIC TEST FOR SYPHILIS

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It has been known for many years that infectious diseases such as malaria, yaws, upper respiratory infections and leprosy are productive of biologic false positive serologic tests for syphilis. It is our purpose in this study to determine the effect of vivax malaria on the spinal fluid and blood serologic reactions. Various investigators have reported on the incidence of false positive reactions in the blood of malarial patients. Fellows¹ stated that in 3,244 cases there was an incidence of 9.9 per cent positive serologic tests for syphilis but in only 3.1 per cent were malarial parasites demonstrated, and when parasites were discovered there was a disagreement between the first and second blood tests in 64.8 per cent of the cases. Burney, Mays and Iskriant,² working with inoculated malaria in non-syphilitic patients, found that all cases gave a false positive serologic test for syphilis at some time during the fever therapy.

CASES STUDIED

These studies were carried out on a group of soldiers who had been in a malarious district for several months and had been transferred to a nonmalarious district three months prior to the beginning of this investigation. One hundred nonsyphilitic white male patients with vivax malaria, proved by finding *Plasmodium vivax* in smears of the peripheral blood, were studied. The range in age was from 20 to 35 years, the mean age being 26.5. All patients except for malaria and its side

effects were healthy. Nine of the patients examined were having their initial attack of malaria, but the remainder had been previously hospitalized with proved cases of malaria for from one to sixteen times (table 1). From this table it will be noted that in the greatest number of cases studied there were from one to four attacks

TABLE 1—Attacks of Malaria

Number of Attacks of Malaria Prior to Onset of the Present Illness	Number of Patients in Each Group
0.	9
1.	10
2	16
3.	11
4.	11
5.	1
6.	3
7...	1
8	2
9..	1
10.	1
11.	7
14..	2
16.	2

prior to the one on which this study was made. All patients were put on atabrine therapy as soon as the malarial parasite was discovered in their blood smears.

METHOD OF STUDY

The patients were arbitrarily selected for this study, the only requisite being a positive blood smear for malarial parasites associated with a clinical attack. Lumbar puncture was performed and blood was taken for serologic tests from all patients within five days after the diagnosis of malaria was made. If the blood test was positive or doubtful, the patient was bled at weekly intervals thereafter until a negative test was obtained. The standard three tube Kahn flocculation test was performed on all blood specimens submitted and the spinal fluid was tested with the standard Kahn test, Pandy and cell count.

TABLE 2—Serologic Tests for Syphilis

Total Number of Attacks Prior to Attack Causing Present Admission	Total Number of Patients Tested in Each Group	Number with Negative Reactions	Percentage of Group Tested	Number with Positive Reactions	Percentage of Group Tested	Number with Doubtful Reactions	Percentage of Group Tested
0	9	4	44.4	5	55.6	0	0
1	15	7	46.6	7	46.6	1	6.7
2	16	6	37.5	7	43.7	3	18.7
3	11	11	100	0	0	0	0
4	11	8	72.7	2	18.2	1	9.0
5	1	1	100	0	0	0	0
6	3	3	100	0	0	0	0
7	3	2	66.6	1	33.3	0	0
8	2	1	50.0	1	50.0	0	0
9	5	2	40.0	3	60.0	0	0
10	1	1	100	0	0	0	0
11	7	5	71.4	2	28.6	0	0
14	2	2	100	0	0	0	0
16	2	2	100	0	0	0	0

RESULTS

The spinal fluid Kahn reaction was negative in all cases tested. In 2 cases the Pandy was reported as "a trace." The cell count was within normal limits in all specimens.

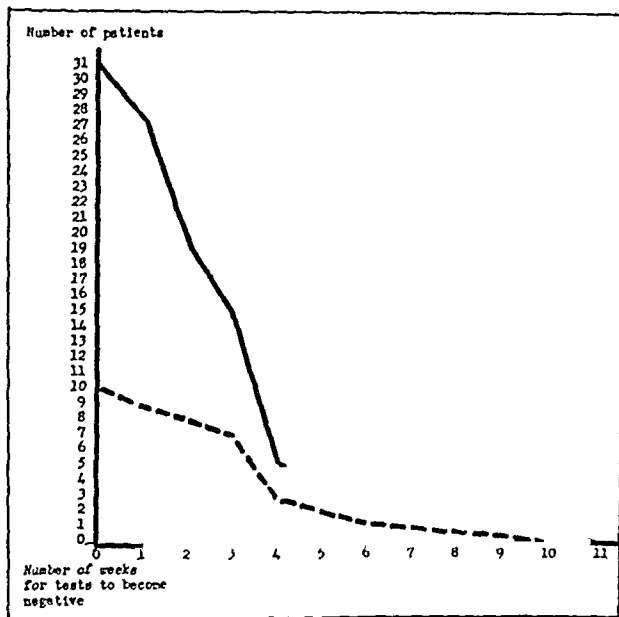
The blood serologic test for syphilis was reported as positive in 33 cases, doubtful in 11 and negative in 56; therefore 44 per cent of the cases examined revealed

20. Hyslop, G. H. Spinal Anesthesia: Nervous System Sequelae. Surg., Gynec. & Obst. 57:799-800 (Dec.) 1933.
The laboratory examinations in these cases were performed through the cooperation of Lieut. Col. D. J. Greiner and his staff of the 142d General Hospital.
1. Fellows, I. S. Relationship of Malaria to Serologic Tests for Syphilis, North Carolina M. J. 2:601 (Nov.) 1941.
2. Burney, L. E.; Mays, J. R. S., and Iskriant, A. P.: Results of Serologic Tests for Syphilis in Nonsyphilitic Persons Inoculated with Malaria, Am. J. Pub. Health 32:39 (Jan.) 1942.

some change in the blood Kahn reaction (table 2). The patients with negative blood reactions were not followed after discharge from the hospital. Two of the patients with positive reactions were lost from observation. Twenty-six (83.8 per cent) of the remaining cases giving positive Kahn reactions became negative after four weeks and all had become negative after ten weeks. Of the 44 patients in whom there was some change in the serologic test for syphilis, 75 per cent had negative reactions after four weeks and only 10.3 per cent still showed some change at the end of six weeks, as shown in the chart.

SUMMARY

Blood serologic tests and spinal fluid examinations were made on 100 nonsyphilitic white men with proved vivax malaria. Weekly examinations of the blood were done on all patients with a reported positive or doubtful Kahn reaction until a negative reaction was obtained.



Change in reaction. Solid line, patients with positive reactions, broken line, patients with doubtful reactions

CONCLUSIONS

1. Vivax malaria did not produce any change in the spinal fluid Kahn reaction in any of the 100 patients in this series.
2. No elevation of the spinal fluid cell count was noted in any specimen.
3. In 2 instances the Pandy reaction was reported as "a trace."
4. Thirty-three per cent of the cases examined gave positive blood Kahn reactions and 11 per cent gave doubtful reactions.
5. There is no apparent correlation between the number of attacks of vivax malaria and the development of positive serologic reactions for syphilis.
6. Eighty-three and eight-tenths per cent of those with positive reactions had negative reactions at the end of four weeks.
7. Seventy per cent of those with doubtful reactions had negative reactions at the end of four weeks.
8. The serologic reaction for syphilis was negative in all cases at the end of eleven weeks.

TRAUMATIC VASOSPASTIC DISEASE OF THE HAND (WHITE FINGERS)

WITH PARTICULAR REFERENCE TO BIOPSY FINDINGS

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AND

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DETROIT

It has been known for some time that workers exposed to repeated percussion may develop circulatory disturbances in the hands. The condition is most frequently associated with the use of the pneumatic hammer (or jack hammer) and consequently the term "pneumatic hammer disease" is the one most commonly employed. Other synonyms are dead fingers, white fingers, traumatic vasospastic syndrome, vasospastic disease of the hands and Raynaud's phenomenon. The industries in which pneumatic tools are now employed are numerous and increasing. These industries include mining, quarrying, road making, shipbuilding, locomotive and other work shops, airplane construction and shoemaking. The tools employed are pneumatic hammers, chisels, riveters, road drills and pounding and lasting machines. The condition has also been said to occur in telephone operators.

Other conditions associated with the use of vibrating tools have been described, but they are not within the scope of this paper. These conditions include changes in muscles, bones and joints, and nerve disturbances.¹

The first report on pneumatic hammer disease was by Loriga of Rome in 1911,² while the first report of the disease in this country was made by Cottingham in 1917.³ His investigation was made at the request of the Journeymen Stone Cutters' Association on men using the pneumatic chisel in the Indiana limestone belt. At this time there was much agitation against the use of the pneumatic chisel. The United States Bureau of Labor Statistics and the United States Public Health Service intervened in the dispute. Dr. Alice Hamilton was sent to Indiana to study the problem. Her report was published in 1918.⁴ From that time on sporadic reports have appeared in the literature, but none have described the clinical findings more thoroughly or completely.

The clinical pattern of traumatic vasospastic disease of the hands is almost stereotyped. After a few months to several years of exposure to the vibrations, the patient notices attacks of blanching and numbness of the fingers. The pallor is much more pronounced than in Raynaud's syncope, but it is not succeeded by the stage of extreme asphyxia so characteristic of the former. It is not symmetrical even when in both hands. In right-handed persons the little, ring, middle and more rarely the index finger of the left hand and the tips of the fingers of the right hand are usually involved. It is more common in the left than in the right hand, because the tool is held in the left hand with the cutting

From the Departments of Neurosurgery and Pathology, Grace Hospital. Paper published under the auspices of the Section on Surgery, General and Abdominal.

1. Sommer, R.: Fragen zur Pressluftschadigung, Zentralbl. f. Chir. 68: 849, 1941. Copeman, W. S. C.: Arthritic Sequelae of Pneumatic Drilling, Ann. Rheumat. Dis. 2: 141, 1940. Atlas, L. N.: Traumatic Vasospastic Dystrophy of the Extremities, Arch. Surg. 42: 1042 (June) 1941.

2. Loriga of Rome, 1911, cited by Barker, N. W., and Hines, E. A.: Arterial Occlusion in the Hands and Fingers Associated with Repeated Occupational Trauma, Proc. Staff Meet., Mayo Clin. 19: 345, 1944.

3. Cottingham, C. C., cited, The President's Monthly Report, Stone Cutters' J. 32: 5 (May) 1917.

4. Hamilton, Alice: A Study of Spastic Anemia in the Hands of Stonecutters, in Bull. 236, U. S. Department of Labor, Bureau of Labor Statistics, Industrial Accidents and Hygiene Series no. 19, 1918, p. 53.

edge pressed against the object. The handle of the hammer is held in the right hand. In left-handed men the condition in the two hands is reversed.

The attacks may occur while the patient is working. Usually the blanching is most pronounced early in the morning, particularly in cold weather. The attacks can be brought on by washing the hands in cold water or going outdoors for a while in cold weather. They usually come on more frequently in the winter months, when exposure to the cold is more prone to occur. Emotion does not appear to produce the attacks. Some workers have complained that if they hold their hands up for a few minutes the affected fingers grow numb. Rothstein⁵ examined 8 employees using the air hammer and found a decrease in sensation of touch, pain and temperature over the affected fingers. In none of the men was this decrease of severe degree. In addition to the blanching and numbness, most patients complain of a discomfort in the hands during the attacks and for a few minutes following the attacks. In a few instances this discomfort is described as a "toothache-like" pain.

The attacks do not result in the wasting and death of tissue. The disease is not attended by the thickening of the skin as in the scleroderma which may accompany Raynaud's disease. One case of diffuse scleroderma involving the face and hands and Raynaud's phenomenon is described as developing together in a pneumatic tool worker.⁶ The dorsalis pedis and the posterior tibial pulsations could not be felt. The author admits that "the vibrations may not have caused the scleroderma." Junghanns⁷ describes a case of gangrene of the finger tips of the left hand in a worker who had used the air hammer for eleven years. Nodules later developed in both forearms. Microscopic studies of the blood vessels in these nodules revealed lesions similar to those found in Buerger's disease.

The disease is limited to the hands, although between attacks some workers have complained of numbness involving one half of the body.⁴ A case of unilateral peripheral vascular disease occurring in the left foot in a worker using this foot to operate a pneumatic drill press has been described.⁸ Gangrene of the foot developed, and the leg was amputated. Microscopic examination of the blood vessels revealed Buerger's disease.

In a study of 67 cases of white fingers in workers using the air hammer⁴ the length of experience with the machine ranged from one and a half to sixteen years. The average time among those who were affected was 5.7 years. The average among the employees who reported that they had not been affected injuriously was 9.2 years.

Rieder⁹ studied 250 workers who had used the air hammer up to forty years. Of these only 75 were entirely free of symptoms. Eighty-six had white fingers. Hamilton⁴ found among 38 limestone cutters that there were only 4 who had never had white fingers. Out of 50 granite workers who had used the air hammer only 7 had escaped having the disorder.

When the workers stop using the pneumatic hammer, the symptoms usually improve slightly but do not disappear. According to Anderson¹⁰ the disease may be relieved on change of occupation if it has not become chronic. Wright¹¹ states that rest from the regular occupation results in improvement only if the condition is early and mild. The prognosis as to complete recovery is doubtful and usually poor, although a few instances of spontaneous recovery have been reported.⁴ Men who have given up the use of the air hammer for many years still have vasospasm of the affected fingers in cold weather.

The present study is concerned with the clinical findings and the microscopic findings in the capillaries and arterioles of the fingers in 6 women war workers using a pneumatic riveter in airplane construction work in Detroit. To our knowledge this is the first time that the condition has been described in women and the first time that microscopic studies of the finger tips have been done.

TABLE 1.—Observations in Six Cases

Case	Age	Sex	Time of Onset	Biopsy and Time After Onset	Extent of Involvement
1	25	♀	2 mo.	Yes/15 mo.	Index, long, ring and little fingers, left hand
2	23	♀	11 mo	Yes/17 mo.	All fingers and tip of thumb, left hand
3	22	♀	11 mo.	Yes/20 mo.	All fingers and tip of thumb, left hand
4	20	♀	10 mo.	Yes/11 mo.	Index, long, ring and little fingers, left hand
5	26	♀	11 mo.	Yes/ 7 mo.	Index, long and ring fingers, left hand
6	34	♀	2½ mo.	Not done	All fingers and tip of thumb, left hand; lateral three toes, left foot; one or more toes, right foot

⁴Typically the fingers and the tip of the thumb of the left hand are involved. Patient 6 has the typical hand involvement but also has had vasospasm of one or more toes of both feet. It is difficult to explain the lower limb vasospasm on the basis of the use of the pneumatic hammer alone, since the right hand has escaped involvement. Possibly a vasospastic diathesis may be a factor in her case. Unfortunately, no biopsy was permitted.

CASE HISTORIES

The age, sex, time of onset, time of biopsy and extent of involvement of the 6 patients are given in table 1. All patients are right handed. Since the clinical picture is almost the same in all cases with the possible exception of case 6, the description of the attacks, the progress, the temperature readings and the biopsy findings will be considered together.

Description of Attacks.—On response to cold air, particularly in the morning, attacks of vasospasm were initiated. During the spell, the involved fingers became white (fig. 1), anesthetic and painful. When the patient entered a warm place the fingers changed to bluish yellow and then to pinkish, and soon the vasospasm was followed by vasodilatation. During recovery from the attack there was a feeling of "pins and needles" and pain, described by some as a "toothache-like pain." In between spells the hands were normal. At times there would be no attacks for many days, even in cold weather. One of the patients developed vasospasm of the affected fingers in summer while holding a cold bottle of carbonated beverage. The spells were not all of equal severity; in different attacks one or more phalanges of one or more fingers were involved. In table 1 is given the maximum extent of vasospasm up to the time of the writing of this paper.

5. Rothstein, T.: Report of the Physical Findings in 8 Stonecutters from the Limestone Region of Indiana, in Bull. 236, U. S. Department of Labor, Bureau of Labor Statistics, Industrial Accidents and Hygiene Series no. 19, 1918, p. 67.
6. Leyes, D.: Diffuse Scleroderma and Raynaud's Phenomenon, *Lancet* 2:602 (Sept. 23) 1939.
7. Junghanns, H.: Blutgefäßschädigungen durch Dauererschütterungen in folge Arbeit mit Pressluftwerkzeugen als Berufskrankheit, *Arch. f. klin. Chir.* 188:466, 1937.
8. Mills, J. H.: Pneumatic Hammer Disease in an Unusual Location, *Northwest Med.* 41:282, 1942.
9. Rieder, W.: Zur Frage der traumatischen Entstehung der Endangiitis obliterans, *Arch. f. klin. Chir.* 193:737, 1938.

10. Anderson, U. S.: Traumatic Disorders of the Peripheral Vascular System, *Minnesota Med.* 25:659 (Aug.) 1942.
11. Wright, Irving: Industrial Medicine and Its Relation to Peripheral Vascular Disease and Injury, *Indust. Med.* 9:463, 1940

Neurostatus.—The texture of the skin and nails was normal in every case and the hands were moist. There was no localized atrophy in the hands. Tendon reflexes were normal. There were no sensory changes except in case 6, in which slight hypesthesia of the left index finger existed from the metacarpophalangeal joint down.

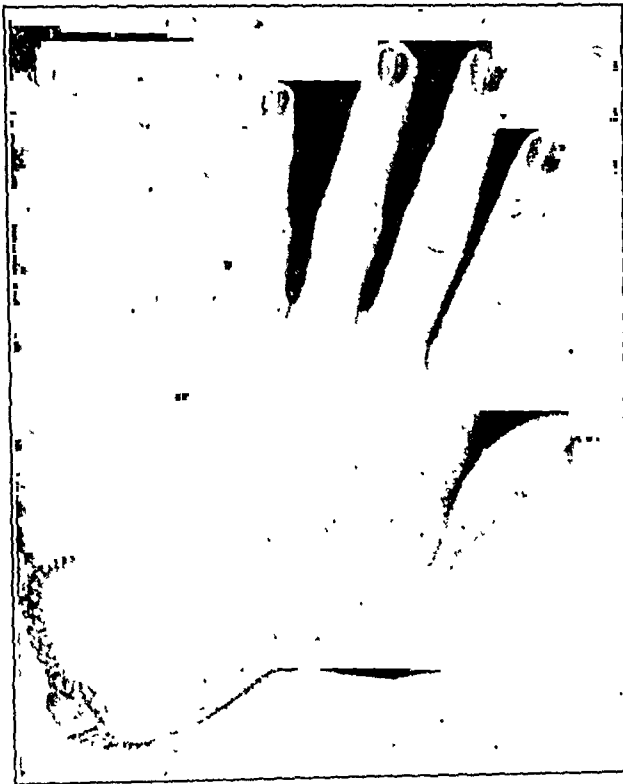


Fig. 1.—Vasospasm produced by exposure to a temperature of 35 F. (hospital refrigerator). This photograph was obtained in May 1945, the outside temperature being in the high forties. The simultaneous cooling of the body and the affected fingers is more successful in producing the vasospastic attack. When the patient left the refrigerator the fingers turned to a cherry-red in a matter of a few minutes. Note that the general appearance and contour of the skin and nails of the hand are normal.

Progress.—For the first few months following the onset of the condition only the tips of the fingers were involved. Within three to four months the vasospastic condition extended to the metacarpophalangeal joints, and in 3 cases the tip of the thumb also was affected. In case 6 the lateral three toes of the left and the second toe of the right foot underwent vasospastic spells. Although fourteen months or longer have elapsed since the patients stopped using the pneumatic hammer, the attacks of vasospasm still continue. However, all are employed and this condition has not been disabling. In conclusion, it may be said that there is some progress in the extent of involvement for the first three to four months following the onset. Thereafter the condition usually remains stationary. Three patients have complained of dull ache on exertion in the left upper limb between attacks of vasospasm.

Temperature Studies.—Temperature readings of the fingers, the toes and the upper and lower limbs were obtained on one or more occasions. Readings were taken after the patients were first exposed to a room temperature of 20 C. (68 F.) for a half hour. Later they were exposed to a room temperature of 30 C. (86 F.) for one hour and their temperatures studied. The vasomotor response was normal. The typical readings are given (table 2).

Biopsy and Pathologic Findings.—Five of the 6 patients consented to a biopsy of the finger tips. Three were obtained from the tip of the long finger and two from the tip of the ring finger of the left hand. Block procaine hydrochloride anesthesia was used. About 15 cc. of a 2 per cent solution was injected along the metacarpophalangeal articulation. The finger tip became completely anesthetized with no change in its texture from the local anesthesia. A median incision was made on the palmar surface of the last phalanx and a slice of tissue $\frac{3}{4}$ inch long and $\frac{1}{8}$ inch wide was removed. This included the skin and the underlying connective tissue bed. The wound was approximated with two interrupted silk sutures, and healing was entirely normal in each instance.

The tissue was fixed in solution of formaldehyde and embedded in paraffin. Serial sections were made, and the tissue was stained with hematoxylin eosin. Autopsy material was obtained in the same manner and was used for control. The sections were studied carefully for changes in the capillaries, arterioles and veins. The

TABLE 2.—Typical Temperature Readings

	Left Hand		Right Hand	
	20 C.	30 C.	20 C.	30 C.
Case 3				
Thumb.....	18.0	30.0	18.0	30.0
1st finger.....	17.0	28.4	18.0	29.0
2d finger.....	17.0	29.0	17.5	29.0
3d finger.....	17.4	28.0	17.3	26.0
4th finger.....	17.6	27.0	17.3	28.0
Mid inner arm.....	24	32	24	32
Case 6				
Thumb.....	19.1	29.0	18.8	29.4
1st finger.....	19.0	28.0	18.0	28.0
2d finger.....	18.8	28.0	18.0	29.0
3d finger.....	18.6	27.0	18.0	24.0
4th finger.....	18.0	29.1	18.0	29.0

capillaries appeared normal except in two sections, in which a red staining amorphous substance was noted within the capillary. Since similar changes were noted in the autopsy material, this was not considered abnormal. The larger vessels had a normal adventitial layer, the muscular coat appeared normal and the endothelial

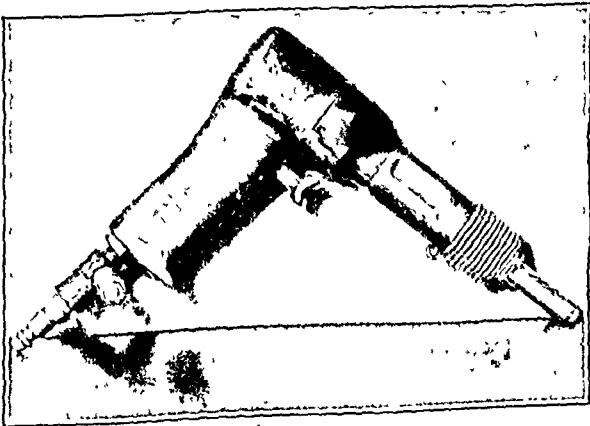


Fig. 2.—Pneumatic hammer used by our patients

lining showed no pathologic changes in all sections studied. There were no evidences of endothelial proliferation or occlusive phenomena. There was no evidence of inflammatory reaction in any of the sections studied.

COMMENT

The pneumatic hammer used by the patients weighed 3 pounds. The riveting surface was $\frac{1}{4}$ inch in diameter and the expended pressure was 17½ pounds. The

machine struck between 3,000 and 3,400 times per minute, the most efficient rate according to the engineers. A photograph of the pneumatic hammer is shown in figure 2. The riveted object was held in place with the left hand, the latter receiving most of the imparted vibrations. The operator worked eight and three-quarter hours per day. The maximum period of continued work without rest was in the neighborhood of two hours and fifteen minutes. In the 6 cases observed, the shortest interval of time before the condition appeared was two and a half months, while the longest period was eleven months after the use of the pneumatic machine. It is interesting to note that all the employees operating this particular machine sooner or later developed vasospastic disease of the left hand.

Since these patients have come under observation, a new stationary pneumatic hammer has been perfected which does not necessitate the handling of any tools. All the operator has to do is to place the part to be riveted into the machine. By this procedure he is exposed to almost no vibrations. This stationary riveter is about four times more efficient than the one operated by hand.

The study of the cases described reveals that the encountered vasospastic disease is unilateral and in the left hand in each instance. The little finger has escaped involvement in only 1 patient. The thumb was normal in the beginning in all cases, but with the progress of the disease there was minimal involvement in 3. In 1 there was vasospasm of the lateral three toes of the left and the second toe of the right foot.

Although the patients have not used the pneumatic hammer for more than a year, attacks of vasospasm still continue. In no instance has there been evidence of bilateral involvement such as in Raynaud's disease. The texture of the hand and skin has remained normal. There have been no instances of scleroderma and no evidence of increasing lack of proper circulation to the finger tip as seen in the later stages of Raynaud's and in Buerger's disease. The condition appears to be a vasospastic disease of the fingers without organic changes in the tissues. Most of the patients have been observed for almost two years, and during this period there has been no appreciable increase in the severity of the condition after the first few months.

In these cases the vasospasm lasts for a short time, frequently disappearing a few minutes after the patients enter a warm building. During the attack there is anesthesia of the affected fingers, and the limb is painful. During the period of recovery most patients complain of a feeling of "pins and needles" and pain for several minutes. The color of the affected parts changes from a cadaveric white to a cherry-red and then to normal within a matter of minutes.

A study of the temperature ranges of the upper limbs revealed satisfactory vasomotor response, which is different from the condition seen in late Raynaud's disease or in Buerger's disease.

The microscopic study of the fingers showed no change in the structure of capillaries and arterioles. It is admitted that since we have only hematoxylin eosin preparations at our disposal, minute changes in cell structure may have been missed. However, gross occlusive phenomena, proliferating intimal changes and inflammatory reaction were not seen. In this respect the condition is similar to the findings in early Raynaud's disease but unlike the findings in Buerger's disease.

The mechanism of the production of this disorder is difficult to explain. Hamilton⁴ considered the low temperature of the workshop as being significant in her study of stone cutters. In our cases the operators worked in room temperatures of 72 to 78 F., so that the importance of low temperatures in the production of the disease is to be discounted.

Although low temperatures are not necessary to cause the disease, they do initiate the attacks once the condition has been established. In the study of our material we have repeatedly noted that cooling of the entire body helps to cause the vasospasm rather than the mere local cooling of the affected hand.

The other factor pointed out by Hamilton⁴ was the anemia of the hand from holding the pneumatic hammer too tightly. This may be important.

The third possibility is injury to myoneural junctions of arterioles in the fingers, disturbing fine mechanisms of chemical adjustment, with resultant loss of vasomotor control. In the study of our cases we have been repeatedly impressed by the fact that in the diseased fingers exposure to cold causes more than a normal response resulting in vasospasm and on warming the fingers there is again more than a normal response, resulting in capillary dilatation characterized by a cherry-red color of the affected parts.

The development of the condition in our cases in a relatively short time (average six to eight months) may be due to the fact that primary vasospastic disease of the extremities is more common in the female. In Hamilton's study an average of one and one-half to five years elapsed between the beginning of the use of the pneumatic hammer and the appearance of the disease.

Our patients have not received special forms of treatment such as sympathetic block or sympathectomy, because such treatment was refused and also because their handicap did not seem to warrant radical means of therapy. It is hoped that in the near future we may be able to study the effect of thoracic sympathectomy on the course of this disease in some cases. From time to time diathermy and heat treatments and iontophoresis with mecholyl have been employed with no appreciable change in their condition. In this connection it may be pointed out again that some patients with traumatic vasospastic disease have worked for as long as twenty years following the onset of the condition with no appreciable increase in the severity of the symptoms. Others have gone into other occupations and have had recurring attacks of vasospasm in the affected limb for as long as sixteen years after the discontinuance of the use of the pneumatic hammer.⁴

From the study of our cases and of the cases described in the literature certain factors in the prevention of this disorder are evident. If the object to be riveted or hammered is held in one hand and the hammer is operated with the other hand, the hand holding the object will be affected. Therefore, mechanical devices to hold the object are most desirable. Other mechanical devices for holding the tool of the hammer, instead of by hand, would prevent the development of the disorder in the hand used to guide and steady the tool. This is important in stonecutting and allied occupations. Other factors which may be important in the prevention of the disorder or further development of the disease are adequate periods of rest from the use of the hammer and early recognition of the disorder and immediate discontinuance of the use of the hammer in these cases.

CONCLUSIONS

1. In 6 cases of traumatic vasospastic disease of the hand no demonstrable organic change in the capillaries and arterioles of the finger tip has been demonstrated in biopsy studies. In this respect the condition is similar to the pregangrenous stage of Raynaud's disease.

2. The appearance of the disease in much shorter time than has been reported in the literature in male patients, and also because all patients thus employed developed the condition, suggests that traumatic vasospastic disease may be more prevalent in the female than in the male.

3. The clinical course of our patients is characterized by attacks of benign vasospasm with little increase in severity over a period of two and a half years' study. However, the discontinuance of the use of the pneumatic hammer has not resulted in a single case of relief.

4. The manner of operation of the pneumatic hammer is important in the prevention of this disorder.

ABSTRACT OF DISCUSSION

DR. GEZA DE TAKATS, Chicago: When the delicate neurovascular mechanism of the human hand is subjected to a vibration rate of 3,000 or more a minute a group of phenomena may occur which roughly fall into two patterns. The authors' excellent description of the digital vasospasm initiated by cold, producing no structural changes and lasting for many years, requires no further discussion. The fact that histologic changes in the blood vessels were absent is very significant, since the primary lesion seems to be elsewhere. During the last year I examined another type of patients who had used a small rotary air-driven tool, weighing about 1½ pounds, with a vibration rate of 12,000 revolutions a minute. The amplitude of vibration was one to three thousandths of an inch, and there was considerable exposure to cold air. Such patients, while sensitive to cold and while showing some evidence of capillary stasis, primarily exhibited a peripheral neuritis of ulnar or median distribution. Their hands, which had been alternately splinted or massaged for the relief of pain, showed the glossy skin, the atrophic musculature, the contracted tendons, the stiff joints and the osteoporosis of the causalgic state. The pain was of a burning character, ascending in type, frequently aggravated or confused by superimposed hysterical anesthesia and anxiety neurosis. Whether this type of hand, because of the higher vibration rate, is simply a more advanced form of the vasospastic hand is impossible to state with certainty. It is more than likely that all these vibrating tools produce a percussion neuritis. I have not yet had the courage to obtain a biopsy of a peripheral nerve from such a hand. Everything we know of the causalgic state would indicate that such a biopsy would aggravate the patient's symptoms. However, the study of Denny-Brown's experiments with a single percussion of a nerve trunk (*J. Neurol. & Neurosurg.* 7:76, 1944) indicates that the myelin sheath and the Schwann sheath easily rupture; that the damaged myelin escapes into the endoneurial space and sets up an irritation. Such an internal disorganization of a mixed nerve is the underlying histologic picture of causalgia, with its incoordination of circulation (de Takats, Geza: *Causalgic States in Peace and War*, *THE JOURNAL*, July 7, 1945, p. 699). Repeated sympathetic blocks have been done on these patients and have helped the vasomotor and the pain phenomena. Often, however, the previous splinting has produced intractable contractures. A defiant attitude develops. It is important then to treat such patients with the utmost urgency, since pain will prevent movement and produces protective muscle spasm. The question is raised whether patients with a high vascular tone are more vulnerable to air-hammer disease. This could be worked out with a suitable test (Naide, Meyer: *Am. J. M. Sc.* 207:606 [May] 1944). Clinically a cold, sweaty hand is often seen in such patients. It is not surprising that a patient with severe diabetic neuropathy in other extremities exhibited the most severe air-hammer hand I have seen, since she already had a widespread demyelinating process. There may be other

contributing factors to this percussion neuritis, but one should repeat the authors' excellent suggestion that it should be possible to eliminate this tool entirely. In many ways this type of nerve injury is more difficult to repair, since damaged myelin and the naked axon cylinders poorly insulated from each other set up long-lasting irritative phenomena.

HERNIAS AND SERIOUS INJURIES IN
MARITIME COMMISSION
SHIPYARDS

WITH REFERENCE TO PREPLACEMENT
EXAMINATIONS

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Shipyards working under contracts for the United States Maritime Commission employed, during the war emergency period, about one million persons in yards located on the perimeter of the United States. Soon after the true magnitude of the shipbuilding program became apparent the Maritime Commission and the United States Navy, realizing the need to increase production, adopted a set of "Minimum Requirements for Safety and Industrial Health in Contract Shipyards."¹ These requirements were designed to conserve manpower and promote the physical welfare, health and safety of employees. One of the basic precepts was the mandatory establishment of preplacement physical examination procedures in each of these contract shipyards (par. H-6.1, ref. 1). Consequently all shipyards of the Gulf and East Coast regions and some of those in the Great Lakes region which had not previously required such examinations developed necessary facilities and plans to include them in their employment procedure. Shipyards operating on the West Coast, however, have not complied with the requirement.

The Pacific Coast "Master Labor Agreement" between the American Federation of Labor and the Pacific Coast shipbuilders, section 11, states in part "There shall be no doctor's physical examinations nor age limits, except as required by law." Negotiations to amend this clause have been continued by the contractors, but labor remains adamant in its attitude. Therefore no employment examinations of any type have been made on any employees of West Coast Maritime Commission shipyards.

There is thus presented, within the Maritime Commission's jurisdiction, an unusual opportunity to compare the results of preplacement physical examinations performed on about 100,000 men and women over a period of three to four years, with a similar group in the same industry which has not been subjected to

This constitutes part of a thesis prepared at Harvard School of Public Health for Master of Public Health degree.

Professor Philip Drinker, chief health consultant, United States Maritime Commission, was of considerable assistance in completing the study.

Dr. McGill formerly was assistant chief health consultant, United States Navy—Maritime Commission Contract Shipyards, Gulf Coast Region.

The opinions expressed are those of the author and do not necessarily conform to those of the United States Public Health Service or the United States Maritime Commission.

Mr. Howard Gates, chief, Casualty Insurance Section, Division of Insurance, United States Maritime Commission, was of invaluable help in furnishing the compensation carriers' reports from which the data were obtained.

1. Minimum Requirements for Safety and Industrial Health in Contract Shipyards, U. S. Navy, U. S. Maritime Commission, Washington, D. C., Government Printing Office, 1943.

examinations. It is unlikely that a comparable group of data has been previously available.

Absolute necessity has forced the shipbuilding industry to employ the physically handicapped or imperfect and to place much emphasis on maximum utilization of man and woman power through the elimination of lost time due to preventable causes. The industrial safety program has resulted in substantial savings through protection from industrial accidents and diseases, but the Maritime Commission officials realized that an important basis for the control of both occupational and nonoccupational illness and injury is the effective utilization of physical examinations. To activate such a program they adopted the newer philosophy of preplacement examinations and accepted as a working basis the specific objectives of such examinations, as outlined by the Council on Industrial Health of the American Medical Association,² which are:

1. To facilitate placement and advancement of workers in accordance with individual physical and mental fitness.
2. To acquaint the worker with his physical status and to advise him in improving and maintaining personal health.
3. To safeguard the health and safety of others.
4. To discover and control the effects of unhealthful exposure.
5. To promote cooperative support and understanding of industrial health practices by employer and employee alike.

The examination procedures may not have fully achieved these broad ideals, but most of the yards doing preplacement examinations have had as a prime objective the fitting of every worker to the type and quality of work according to his or her ability to perform such work continuously, without undue impairment to self or fellow workers. Numerous wartime exigencies have presented obstacles to the fullest realization of the potential benefits.

EXAMINATION PROCEDURE

The steps in the employment procedure, as generally practiced, are as follows: The applicant is first given a preliminary interview by the employment department to determine his general qualifications for work. He is then referred to the medical department for examination and classification, after which he is sent back to the employment department for hiring and placement within his physical capacity, or rejection. If rejected, the considerable expense and time of completing employment, including finger printing, photographing and issuing a badge, are thus eliminated.

The examination usually includes a brief medical and personal history signed by the patient. Considerable variation exists in the thoroughness with which this is done, but a nonmedical clerk usually spends two to four minutes obtaining the data. The record of height, weight, blood pressure, pulse rate, hearing and visual acuity, temperature and the like is usually made by a trained assistant or a nurse in about ten minutes for each worker.

When the preliminary tests are concluded, the applicants are examined by the yard physician. The men are usually examined, stripped, singly or in groups, special search being made for hernias, varicosities, deformities and cardiovascular or neuropsychiatric defects. Examinations of women are usually not so complete as indicated for the men. Examinations have not always been performed in the most desirable manner, sometimes being little more than medical inspections, especially

when one physician, with his nursing and clerical helpers, is required to examine up to 160 workers daily. Placement following the examinations has not always been ideally practiced, but in all yards some effort has been made in this direction.

From the examination data the physician classifies the applicant in accordance with the system generally adopted by industry:

- A. Fit for any work in the yard.
- B. Physically underdeveloped or with correctible defect: otherwise fit for any work, or capable of all but specifically excepted jobs.
- C. Fit only for certain jobs when approved and supervised by the medical or safety department.
- D. Physically unfit for any work in the yard.

The rejection rate, or proportion of those classified D, has averaged less than 3 per cent. This is an indication of the liberal physical standards used and of the general success of the practice of preplacement physical assessments. The National Association of Manufacturers³ states that the average rejection rate of 1,154 plants in 1939 was 4.4 per cent. This rejection rate was before 11,000,000 younger men were inducted into the armed forces, leaving a larger proportion of persons physically defective to be hired by industry. In personal communications from other large industrial groups, I am informed that their present rejection rates are somewhat higher than the 3 per cent now experienced in the Maritime Commission yards.

GEOGRAPHIC DISTRIBUTION

Of the ten shipyards considered in this study, five, located on the East and Gulf coasts, required preplacement examinations. The other five, on the Gulf and West coasts, which did not require examinations, are henceforth considered as the control yards. Comparison of these similar sized groups of workers must necessarily be on an arbitrary basis. The innumerable personal and socioeconomic factors influencing two groups of people in such different geographic areas cannot be statistically evaluated.

Four of the yards doing examinations and two in the control group are located in the Southern states. For many years it has been generally believed that this geographic area is below the median level of the United States in many of the important socioeconomic classifications. It is known that this same area presents an unusually high incidence of many diseases, especially dietary deficiencies, venereal diseases, parasitic diseases and tuberculosis. Medical care facilities also are known to be insufficient. These are mentioned to indicate some of the factors that might possibly influence the results on which this study is based. It is generally believed that a lowered physical well-being increases accident proneness. If the Southern, and to a lesser extent the Eastern, shipyards have employees of lower physical status than that of the Western yards, they may be expected to have more serious accident claims, including hernias, presented for compensation adjustment, other in-plant safety and health hazards being equal.

EFFECTS OF EXAMINATIONS ON COMPENSATION INSURANCE RECORDS

The accident frequency records, as listed in table 1, for each yard under consideration for the period 1943-1944, were taken from reports compiled by the Division of Industrial Hazards, United States Department of

2. Industrial Health Examinations, J. A. M. A. 125:569 (June 24) 1944.

3. A Report of Survey of 2,064 Industrial Establishments, New York, National Association of Manufacturers, 1941.

Labor, from monthly reports furnished them by the individual yards. The "Minimum Requirements,"¹ paragraph 4.13, b, defines accident frequency as

$$\frac{\text{Number of Disabling Injuries} \times 1,000,000}{\text{Total Man Hours Worked for Period Covered.}}$$

A disabling injury is one which results in a person being unable to report for work on the next regular shift or

TABLE 1.—Accident Frequency Rates,* 1943-1944

Date 1943	Examination Yards					Control Yards				
	1†	2†	3†	4†	5†	6‡	7‡	8†	9‡	10†
January.....	21.4	26.9	21.8	71.4	27.4	45.3	21.3	65.6	36.8	28.9
February.....	20.5	27.0	12.1	56.0	40.7	45.0	19.8	55.7	28.5	16.9
March.....	18.8	36.7	20.8	59.2	16.6	41.0	20.9	41.2	26.9	21.9
April.....	19.7	32.6	15.6	81.5	28.9	36.9	22.2	35.1	25.6	21.4
May.....	15.5	39.3	15.9	75.3	62.4	30.7	10.1	31.4	31.4	32.0
June.....	15.6	47.0	21.6	61.7	51.4	28.6	18.2	31.6	20.1	31.6
July.....	17.0	42.5	19.5	61.2	31.1	21.5	20.5	22.1	29.2	35.6
August.....	18.2	50.2	17.9	62.2	27.3	22.8	21.1	21.5	19.6	29.8
September.....	16.4	40.6	20.2	47.4	33.1	19.8	19.0	17.4	30.1	32.3
October.....	11.3	35.9	11.1	50.6	27.9	18.4	19.4	21.4	25.6	31.4
November.....	16.3	27.7	11.1	38.1	22.3	16.6	20.0	23.2	27.3	25.9
December.....	10.3	33.4	9.2	31.7	21.1	12.4	18.0	23.0	16.0	21.6
Annual.....	17.	36.8	16.4	63.5	33.5	28.8	20.0	32.8	27.0	30.1
1944										
January.....	8.6	31.2	8.9	39.3	21.4	11.8	20.0	22.6	20.6	31.1
February.....	10.8	26.4	8.7	41.3	11.1	10.7	21.0	18.5	21.0	35.5
March.....	11.1	16.8	3.6	38.6	1.2	9.1	17.3	22.2	19.8	36.7
April.....	10.5	23.9	2.8	40.3	10.6	7.1	23.1	26.8	27.8	31.4
May.....	10.3	30.4	9.0	42.0	18.2	9.6	17.0	26.0	30.7	31.1
June.....	12.2	31.5	11.1	76.3	12.9	7.7	14.2	31.6	25.2	10.3
July.....	7.7	30.0	8.3	63.1	17.2	6.9	10.4	16.7	29.3	15.1
August.....	11.6	35.0	12.0	61.1	22.4	7.5	11.0	20.3	26.5	16.7
September.....	9.6	31.3	7.9	27.3	21.7	7.0	15.9	18.5	27.1	15.3
October.....	7.0	....	7.7	29.0	17.9	8.2	15.2	21.3	35.6	13.9
November.....	9.8	32.6	5.3	21.7	9.5	8.3	15.1	20.1	....	12.7
December.....	10.8	30.7	6.1	12.2	11.7	7.3	11.3	18.0	26.0	13.1
Annual.....	9.9	30.8	7.5	41.5	15.4	8.4	16.1	21.9	26.3	22.2

* Bureau of Labor Statistics quarterly tabulation from monthly reports from yards.

† Gulf Coast.
‡ East Coast.
§ West Coast.

TABLE 2.—United States Maritime Commission Quarterly Reports, Loss Ratios (Cumulative)

Number of Yard	1st quarter	2d quarter	3d quarter	4th quarter	5th quarter	6th quarter	7th quarter	8th quarter	9th quarter	Average
Examination										
1	22.0	41.30	23.65	27.13	31.40	30.04	20.16	32.71	31.91	30.63
2	30.7	28.31	29.07	29.87	26.07	36.94	38.59	41.51	41.51	31.73
3	20.0	21.25	19.19	20.17	27.69	26.19	31.52	31.94	33.53	26.06
4	68.5	20.22	24.76	28.91	38.04	37.93	38.07	36.71	36.30	35.45
5	12.2	23.69	25.97	40.32	42.28	37.66	40.49	40.10	40.69	33.71
								Mean		32.12±1.73
								Standard deviation		3.91
Control										
6	39.6	29.51	30.32	45.91	47.40	45.25	46.29	44.40	41.17	41.43
7	....	36.21	35.19	31.06	39.36	40.59	50.17	43.99	40.08	40.12
8	41.2	37.21	27.88	28.93	32.01	31.93	32.75	34.38	39.52	31.98
9	52.5	63.61	72.92	69.43	68.61	87.0	82.81	77.69	69.58	71.57
10	30.0	31.42	36.81	46.30	59.88	64.13	61.67	69.76	69.59	62.98
								Mean		48.01±5.92
								Standard deviation		13.2
1st quarter—10/1/42 to 12/31/42										
2d quarter—10/1/42 to 3/31/43										
3d quarter—10/1/42 to 6/30/43										
4th quarter—10/1/42 to 9/30/43										
5th quarter—10/1/42 to 12/31/43										
6th quarter—10/1/42 to 3/31/44										
7th quarter—10/1/42 to 6/30/44										
8th quarter—10/1/42 to 9/30/44										
9th quarter—10/1/42 to 12/31/44										

subsequent to the initial return to work. The yards without examinations more nearly group about their two year mean frequency rate (21.8) than do the examination yards about their mean rate (23.9), although the difference is not significant.

Table 2 shows the quarterly loss ratios as furnished by the Casualty Insurance section of the Division of

Insurance of Maritime Commission. This is the ratio that the total amount of incurred expenses (which includes incurred indemnity and medical losses) bears to the total compensation insurance premiums. The total incurred losses and expenses include serious and nonserious open and closed claims and contract medical costs. However, incurred indemnity losses vary considerably with the workmen's compensation laws and regulations of each state.

These loss ratios are used by compensation insurance companies to measure the efficiency of the preventive and corrective medical programs of the yards. Other factors being equal, a high loss ratio indicates more numerous and more serious accidents and costlier medical treatment. The employer is interested in the loss ratio as an indication of the protection provided and of the quality of medical service given his employees. The employee also is concerned in the loss ratio, as it reflects the protection and service afforded him by the industrial safety program and medical department. If preplacement examinations are of value in protecting

TABLE 3.—Range of Total Compensation Costs; * Serious Cases †

Location of Yards	Deaths		Hernias		Eye Injuries		Other Injuries	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Alabama.....	\$2,145x	\$5,770x	\$399	\$410	\$310	\$153	\$364	\$1,349
California.....	600	4,150	322	916	325	3,246	505	7,451
Florida.....	637	6,000	300	353	301	101	300	3,346
Georgia.....	651	2,425	303	486	411	0.00	35.0	3,778
Maryland.....	503	8,000	209	707	307	3,182	300	5,142
North Carolina.....	5,537	5,763	313	413x	325x	421	3.6	1,479
Texas.....	557	6,310	325	930	300	3,540	300	6,287

* Range of total incurred indemnity and medical losses, closed claims (except as indicated x) from compensation carriers' quarterly reports.

† Serious cases are those of over \$300 total cost.

the worker, such protection should result in a lowered insurance loss ratio.

Comparison of the loss ratios (table 2) for both groups of yards shows this to be true. For the nine quarterly periods Oct. 1, 1942 to Jan. 1, 1945 the examination yards range from a low of 12.2 to a high of 58.5. The averages of these five yards vary from 26.06 to 35.4, with a mean of 32.12. For the same quarterly period the loss ratios of the control yards range from 28.9 to 82.8. The averages of these yards vary from 33.9 to 71.6, with a mean of 48.01. It is statistically significant that the control group mean loss ratio is 50 per cent higher than that of the examination yards.

Variation in compensation costs is demonstrated by table 3, which shows the range of totals of incurred indemnity and medical losses, closed claims, in various states as reported in the compensation carriers' quarterly reports to the Maritime Commission. It will be noted that considerable variation exists between the minimum and maximum costs of closed compensation claims for death, serious eye injuries and other serious accidents. The range for hernias is not so great. As cases costing \$300 or more are reported as serious, the minimum figures are limited to items above this sum. These variations result from the different application of differing workmen's compensation laws by the respective state commissions. This makes it impossible to compare the yards on the basis of total compensation

expenses but does not preclude utilization of the total number of claims for serious injuries.

A principal item of importance in any tabulation of compensation losses is the frequency of hernias, especially inguinal. The occurrence of hernias included in the total incurred losses and expenses and the total number of serious closed compensation cases have been tabulated from the compensation insurance companies' quarterly report. To make these results comparable, an average of serious cases and hernias per month, reduced to a ratio per thousand employees, is presented for each yard.

$$\frac{\text{Hernias (or serious cases)} \times 1,000}{\text{Number of months} \times \text{average monthly employment}} = \text{Hernias (or serious cases) per thousand employees per month.}$$

The comparisons have been standardized by using employment figures available in the Maritime Commission Division of Shipyard Labor Relations up to January 1945.

These data are listed for both groups of yards in table 4, and ratios are compared in the graph. The total control group of 106,238 average employment had an average of 4.33 hernias and 35.10 serious cases per month, with a ratio of 0.21 hernias and 1.69 serious cases per thousand men monthly. The group of yards doing examinations, with an average employment of 107,921 per month, had an average of 1.47 hernias and 12.87 serious cases per month, with a ratio of 0.06 hernias and 0.58 serious cases per thousand men monthly. The ratio for hernias is over three times as high and for serious cases almost three times as high in the control yards as in the examination yards, indicating a consid-

TABLE 4.—*Ratios of Hernias and Serious Cases per Thousand Men per Month*

Five Shipyards Performing Employment Examinations
Five Shipyards Not Performing Employment Examinations*
1941-1944

Examination	Number of Yard	No. of Mos.	Average Men/ Mo.	Hernias			Serious Cases		
				No.	Aver./ Mo.	Ratio†	No.	Aver./ Mo.	Ratio†
1.....	39	21,955	92	2.36	0.11	416	10.67	0.49	
2.....	33	42,837	97	2.94	0.07	9.0	29.59	0.63	
3.....	33	13,230	13	0.39	0.03	198	6.60	0.46	
4.....	36	16,244	41	1.14	0.07	227	6.31	0.49	
5.....	33	13,646	17	0.52	0.04	595	11.07	0.83	
Subtotal.....		107,921	269			2,266			
Subaverage.....	34.8		52	1.47	0.06	441	12.87	0.58	
Control*									
6.....	24	38,216	135	5.62	0.14	1,365	56.88	1.49	
7.....	24	18,459	134	5.58	0.30	825	34.33	1.26	
8.....	21	20,190	122	5.81	0.29	5.9	24.05	1.14	
9.....	16	15,905	38	2.33	0.15	7.9	46.19	2.90	
10.....	27	13,468	61	2.26	0.17	379	14.04	1.04	
Subtotal.....		106,238	490			3,837			
Subaverage.....	22.4		98	4.33	0.21	767	35.10	1.69	
Total.....		214,159	710			6,043			

* Controls are yards without examinations.

† Ratio = $\frac{\text{hernias (or serious cases)} \times 1,000}{\text{months} \times \text{average men per month}}$ = per 1,000 men per mo.

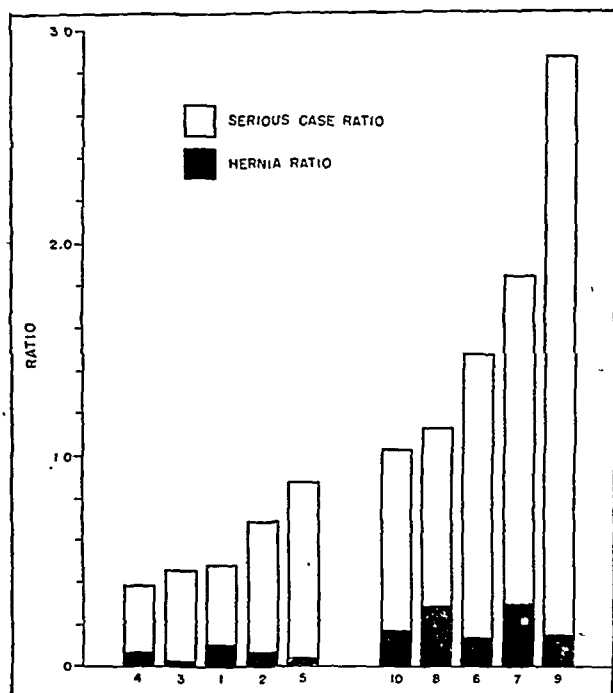
erable reduction of these two common and expensive items of compensation costs in the yards requiring examinations.

Special attention is directed to the comparison of yards 3 and 10. These yards, a few hundred miles apart in different states, are as nearly alike as any under Maritime Commission control. The two are operated

by the same company. Both are located in shipbuilding communities; socioeconomic factors are comparable. Workers are drawn from the same geographic areas. For the purpose of this study they are identical except for their medical programs.

Yard 3 developed a medical program, including preplacement examinations, during construction of the yard and has continued to expand the medical activities with full cooperation of the management. By contrast, full cooperation of management of yard 10 was not extended the medical department until the ship construction program was well under way. As a result, the medical activities were not permitted to develop to maximum usefulness. The results of this antithesis are clearly shown in analysis of data of table 4.

Yard 3 had an average of 0.39 hernia and 6.00 serious cases per month, ratios of 0.03 and 0.46 respectively, per thousand men monthly. Yard 10 had an



Ratios, hernias and serious cases. Numbers refer to listing of yards of table 4.

average of 2.26 hernias and 14.04 serious cases per month, ratios of 0.17 and 1.04 respectively per thousand men monthly. Hernias were thus over five times (5.7) as frequent and serious cases over two times (2.3) as frequent in yard 10 as in yard 3. Loss ratios (table 2) at the former yard range steadily upward from 30 to 69.59; at the latter this increase is from 20 to 33.53—from 50 per cent to 100 per cent less than the sister yard which did not perform preplacement physical examinations. These loss ratios reflect the expenses of compensation insurance payments and are thus an expression of the working health of the shipyard employees.

Yard 5 had the next lowest hernia ratio, 0.04, and the highest serious case ratio, 0.88, of any examination yard. These are much lower than ratios at yard 10 in the same state, indicating that the difference between yards 3 and 10 was not due exclusively to any differences between the respective state compensation commission policies. Similarly, the differences between yards 5 and

10 are not due to varying compensation practices but to in-plant factors.

Further comparison with the accident frequency rates for yards 3 and 10 (table 1) shows the former to be significantly lower than the latter, with 1943 annual rates of 16.4 and 30.1 respectively. The monthly rates for 1944 show this difference to be continuous, 7.5 and 22.2 respectively.

It is not presumed that physical examinations or even the medical programs are exclusively responsible for the contrast between these two groups. However, it cannot be denied that the more complete medical programs of the examination yards contributed to their lower loss ratios and to their more favorable experience with hernias and serious cases, even though the completeness of these programs may have differed only by the examinations.

SUMMARY

1. Five shipyards which conducted preplacement physical examinations were compared with a similar group without examinations. Average employment of each group exceeded 100,000. Compensation insurance loss ratios, frequency rates and actual occurrence of hernias and severe cases in the compensation carriers' reports of losses incurred during a three year period were used as the basis of this comparison.

2. The average loss ratios for control yards are about 50 per cent higher than those of the examination yards.

3. The average number of hernias and serious cases per month, and the rate of these per thousand men monthly, are about three times as high in yards without examinations as in yards with preplacement physical examinations.

Clinical Notes, Suggestions and New Instruments

THE CRUSH SYNDROME

REPORT OF FATAL CASE WITHOUT COMPRESSION INJURY

LIEUTENANT COLONEL CLIFFORD C. WOODS

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AND

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The crush syndrome, also known as compression syndrome with traumatic edema, has been described in British and American literature since 1940. The Medical Research Council of Great Britain has collected data on 100 cases. The typical case is fairly clearcut, and its differential diagnosis is not usually difficult. A patient is admitted with a history of compression injury, usually of an extremity. Definite absence of shock with pronounced hemoconcentration is present.

The pathologic physiology is somewhat better understood than the knowledge of the shock syndrome itself. Often the syndrome follows an initial shock picture. The usual sequence of events is as follows:

Following the recovery from the shock picture, there is a gradual diminution in the urinary output. The urine will be tinted and contain some red blood cells and also a sediment which is almost diagnostic of the syndrome. This sediment, if carefully examined spectroscopically, will prove to be myohemoglobin. The patient's blood pressure is well maintained, a moderate anemia may manifest itself and a progressive azotemia is noted. A reevaluation and history of these patients may reveal a story of prolonged compression of an extremity, the thorax or the abdomen itself. If an extremity has been compressed, it will be noted that the victim, once comfortable after the control of shock and proper control of bleeding, will react after the removal of the constricting tourniquet. The part will swell and the blood pressure will tend to fall, although

temporarily maintained by vasoconstriction. Hemoconcentration and oligemia may set in because of loss of plasma into the swollen tissues. Increased tissue tension may partially obliterate the pulse, and the part may become cold.

In some patients, pressure damage may be manifested by discoloration and vesication. In still others the objective signs of injury may be concealed. Damage to some of the abdominal contents may require extensive operative surgery and resection. The patient reacts favorably and may be well on the way to recovery. From a few hours to several days after the initial treatment the urine becomes cloudy and a brown sediment forms. A spectroscopic analysis of this sediment will show it to be myohemoglobin. Further studies will demonstrate pigment casts which are at first hollow tubes and later covered by epithelial cells. Other urinary findings include a progressive increase in potassium and creatinine, most of these products resulting from degeneration of muscle tissue. Blood studies reflect a renal failure. Nitrogenous retention becomes progressive and the carbon dioxide combining power is low at first but rises thereafter. A terminal fall in blood pressure may result from the retention of acids derived from the damaged tissue.

According to Bywaters,¹ one third of the cases go on to spontaneous recovery and suggest a moderate degree of muscle damage. The disturbance of urinary functions and blood chemistry reverses itself with or without any therapy. In severe cases, however, sometimes as late as the sixth or seventh day, renal function fails and azotemia and urea will supervene.

The gross and microscopic pictures of the kidneys are quite characteristic. Grossly the kidneys are large, pale and swollen. The capsules are tense. The microscopic picture shows local areas of tubular necrosis and pigmentary casts about the loops of Henle, the distal convolutions and the collecting tubules. The pigments were found by Bywaters, Delory and Remington to have specific spectroscopic characteristics of an intracellular hemin compound which is responsible for oxygen storage in the muscles. This substance, which is much lighter than hemoglobin, is easily filtered through the glomeruli but tends to precipitate in the excretory tubules.

Changes in muscles may be either macroscopic or microscopic. Grossly the muscles may appear to be normal, but microscopic examination shows varying degrees of patchy microscopic damage. In serious damage the muscle will be swollen, pale, friable, hemorrhagic and sharply demarcated from the surrounding normal tissues. The microscopic appearance may show all the changes from edema and loss of cross striations to complete necrosis. Similar damage to that just described may occur following accidents in which arterial injuries result in arterial spasms and no apparent gross tissue damage. The therapy of this curious syndrome is similar to that utilized in prevention of urinary failure following the transfusion reaction or the use of sulfonamides. The chief objective is to maintain an adequate alkaline urinary output. This should be done, if possible, before the release of the tourniquet. If renal failure ensues, all therapeutic efforts usually fail, although some patients have been known to recover with urea levels of approximately 500.

This case is presented because of its unusual clinical course, the delay of manifestation of urinary failure, the absence of external evidence of compression and rather typical pathologic pictures of muscle and kidney damage. The patient, a healthy white infantry soldier aged 21, was admitted to the hospital after being thrown from a jeep while on a field problem and sustaining a severe blow to the abdomen, back and right arm. He was in evident shock, with a pulse rate of 120 and blood pressure of 80/60. He was pale, his skin was clammy and he complained of pain in the right shoulder and right side of the neck. Moderate abdominal tenderness and rigidity, with dullness in both flanks, were present. There was diminished peristalsis. Significant laboratory findings at the time of his admission were red blood cells 4,430,000, hemoglobin 90 per cent, white blood cells 18,000, with 83 per cent neutrophils and 17 per cent lymphocytes. The urine was essentially normal. X-ray examinations

1. Bywaters, E. G. L.: Ischemic Muscle Necrosis, J. A. M. A. 124: 1103 (April 15) 1944.

of the abdomen revealed an indefinite increase in density in the left upper quadrant. He was matched for transfusion and, following a diagnosis of a ruptured viscus, he was given both blood and plasma. With a systolic pressure of 100, the abdomen was opened through a left rectus incision under gas-oxygen anesthesia. The entire peritoneal cavity was found to be filled with blood. It was conservatively estimated that 3 quarts of blood had been lost in the abdominal cavity. As no perforations of a viscus were found, 1,500 cc. of the abdominal blood was aspirated, citrated and given back as a transfusion. In addition, he received 1,000 cc. of blood from a compatible donor. Further inspection of the abdomen revealed a huge hematoma in the transverse colon originating from a torn middle colic artery. The entire circulation of the transverse colon and parts of the descending colon had been destroyed. The pancreas was found to be badly contused and hemorrhagic. The transverse mesocolon was ligated in sections, and the entire transverse colon and about one half of the descending colon were exteriorized. The patient's immediate postoperative condition was better than before operation. His blood pressure was 130/80 and pulse rate 100. He was started on intravenous 5 per cent glucose and saline solution and continuous gastric suction and was given 2,000 cc. of blood during the next four days. Sulfadiazine and penicillin, in divided doses, were begun. On the second postoperative day, following symptoms referable to his lungs, an x-ray revealed atelectasis of the right base. This condition responded rapidly to treatment. The exteriorized colon was removed by cautery on the third postoperative day. On the fifth postoperative day his condition was good except for moderate abdominal distention, which was easily controlled by means of a Miller-Abbott tube. His blood chemistry was normal. On this, the fifth postoperative day, his urine first became smoky. Urinalysis showed 10 to 15 red blood cells per high power field and the urinary output at this time averaged 1,200 to 1,400 cc. for the twenty-four hours. Twenty-four hours later, however, the output had dropped to approximately 120 cc. In spite of this his colostomy was functioning well, the Miller-Abbott tube had been removed and he tolerated a soft diet. Efforts were made to stimulate the excretion of urine by the use of intravenous hypertonic solutions and sodium lactate, but the output never rose higher than 200 cc. in twenty-four hours regardless of the fluid intake. The ureters were both catheterized, and this procedure was followed by a large quantity of blood in the urine. On the tenth postoperative day, examination of the urine revealed creatinine 35 mg., albumin 300 mg. per hundred cubic centimeters and numerous red blood cells. On this date the nonprotein nitrogen was 33. On the eleventh postoperative day it rose to 190, creatinine 7 and on the twelfth postoperative day the urea nitrogen was 79.1 and creatinine 7.5. This increase in nitrogenous end products was progressively upward until his death on the fourteenth postoperative day. Death was preceded by the appearance of moderate pulmonary edema and edema of the extremities and trunk. The terminal phase was quite sudden and apparently due to heart failure.

At autopsy it was found that the heart, spleen and pancreas were all edematous. Moderately extensive hemorrhages were noticed beneath the mucosa of the calices and pelvis of each kidney. It was felt that this change was due to trauma during catheterizations. Grossly both kidneys were enlarged, pale and quite edematous. Section through the capsule resulted in bulging of the cortical surface. On microscopic examination a generalized edema was noticed through both kidneys, involving the greater portion of the interstitial tissue and the tubular elements. Large masses of round cells and occasional polymorphonuclear cells were present between the collecting tubules. Many loops of Henle and collecting tubules were almost completely filled with granular and homogeneous pigments which almost completely obliterated the lumens, this process being more evident in the medulla than in the cortex. The medulla contained numerous tubules which were filled with red blood cells, round cells and polymorphonuclears. Grossly both psoas muscles showed some evidence of edema but no other changes. Specific iron stains were negative. On microscopic examination all manner of transition from the normal was seen. The changes included complete necrosis of some of the muscle fibers,

loss of cross and longitudinal striations in others and partial necrosis in still others. The character of the necrotic muscle also varied, some fibers appearing as amorphous masses situated between normal muscle fibers, while others consisted of masses of loose basophil staining granular pigments. Swelling of the muscular nuclei and proliferation of the endomysium was evident in adjacent intact fibers. Iron stains of the presence of hemoglobin pigments in the muscle and kidney were negative. Reticulum stains demonstrated degeneration of not only the muscle fibers themselves but of the supporting stroma.

SUMMARY

1. A soldier was thrown from a jeep. He was brought to the hospital immediately. There was no prolonged compression of an extremity.
2. Renal failure developed nine days after his injury and his operation.
3. Advanced degeneration was demonstrated in both kidneys and psoas muscles.
4. Typical cellular and obstructive lesions of the renal tubules were found.

CONCLUSION

The case presented apparently demonstrates a clinical picture of the crush syndrome in which anuria was delayed until approximately the ninth day. The failure to find necrotic or degenerative muscle on gross inspection and the subsequent finding of extensive degeneration of the psoas muscles suggest a vasospastic phenomenon with ischemic necrosis. A factor which may have contributed to the degeneration of the muscles was the presence of the overlying hematoma.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., Secretary.

ALLERGENIC PREPARATIONS (See New and Nonofficial Remedies, 1944, p. 35).

The following extract now stands accepted:

WYETH, INC., PHILADELPHIA

Allergenic Extract: The following extract is marketed in treatment packages of five 1 cc. size cartridge ("Tubex") vials representing graduated concentrations, namely 100, 1,000, 6,000, 20,000 and 20,000 pollen units per cubic centimeter. Also in treatment packages of five 1 cc. size cartridge ("Tubex") vials, each representing 20,000 pollen units per cubic centimeter.

Ragweed Combined (Giant and Short Ragweeds, in equal proportions). The pollen is weighed and extracted with ether. After removal of the ether the material is mixed with the extracting liquid, consisting of a 0.5 per cent sodium chloride solution containing approximately 0.28 per cent of sodium bicarbonate and 0.5 per cent of phenol and covered with toluene. After three days the extract is subjected to Berkefeld filtration and tested for sterility. Standardization is on the basis of pollen units, 1 pollen unit being equivalent to 0.001 mg. of pure pollen.

MENADIONE (See New and Nonofficial Remedies, 1944, p. 638).

The following dosage forms have been accepted:

SHARP & DOHME, INC., GLENOLDEN, PA.

Tablets Menadione: 1 mg.

Solution Menadione (in peanut oil) 2 mg. per cc.: 1 cc. ampuls.

SULFADIAZINE (See New and Nonofficial Remedies, 1944, p. 178).

The following dosage form has been accepted:

MCNEIL LABORATORIES, PHILADELPHIA

Tablets Sulfadiazine: 0.5 Gm.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1944, p. 608).

The following dosage form has been accepted:

AMERICAN PHARMACEUTICAL CO., INC., NEW YORK

Tablets Thiamine Hydrochloride: 1 mg.

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SATURDAY, NOVEMBER 3, 1945

TYPHUS THERAPY

The rickettsias of typhus are obligate intracellular parasites that multiply only in the interior of host cells. In 1937 Zinsser and his associates¹ of Harvard Medical School showed that the rate of intracellular multiplication of rickettsias in Maitland tissue cultures is determined by the metabolic rate of the host cells. Under conditions of high metabolic activity, as determined by the rate of acid formation or of oxygen consumption, little or no multiplication of the intracellular parasites takes place. Only under conditions of reduced metabolic activity was active multiplication noted. This observation finds partial confirmation in the subsequent demonstration² that riboflavin deficiency, which slows down metabolism by interfering with internal respiration, reduces the normal resistance of rats to rickettsia infection.

In order to find substances with the opposite effect, Greiff and his associates³ of St. Louis University School of Medicine have recently studied the influence of various vitamins, enzymes, enzyme activators and related substances on the rate of multiplication of typhus rickettsias in the yolk sac of the developing chick embryo. Groups of five day embryonated eggs were inoculated in the yolk sac with 0.1 cc. of a standard rickettsial suspension. At various intervals after this inoculation half of the members of each group were injected with various concentrations of the substances to be tested, the other half serving as untreated controls. The rate of multiplication was estimated from rickettsial counts of the yolk sac membrane made at suitable intervals after inoculation. Thus, in untreated control eggs a count of less than 1 rickettsia per oil immersion field was usually recorded during the first two days, increasing to from 10 to 100 rickettsias per field by the fourth day and to between 8,000 and 12,000 per

field by the eighth day. Death usually took place on the seventh or eighth day.

Greiff found that most of the vitamins, enzyme activators and related substances thus far tested neither accelerate nor retard this control rate of multiplication. Among these negative substances are biotin, riboflavin, thiamine hydrochloride, cholin chloride, orthoaminobenzoic acid and meta-aminobenzoic acid. The only positive inhibitor thus far found is para-aminobenzoic acid. After yolk sac injection of 3.3 mg. of this B vitamin fraction the oil immersion count rarely exceeds 1 rickettsia per field at any time during the first fifteen days. All embryos remain alive until the end of the experiment. This is an antirickettsial titer equal to that previously reported from yolk sac injections of 325 Oxford units of penicillin.⁴

The therapeutic value of para-aminobenzoic acid was further tested on groups of mice inoculated intraperitoneally with multilethal doses of murine typhus rickettsias. Half of each group (controls) was fed throughout the experiment on Purine dog chow. Immediately after injection of the rickettsias the other half was placed on the same diet plus 3 per cent para-aminobenzoic acid. Of 23 normally fed (control) mice, all died of typical typhus infection on or before the seventh day. Only 1 of the 23 para-aminobenzoic acid fed mice died during this or subsequent periods, a survival rate of practically 100 per cent.

Greiff believes that this remarkable therapeutic effect was due to metabolic stimulation of host cells. He, however, disclaims priority for this discovery. Since completing his experiments he has learned that similar favorable effects from para-aminobenzoic acid therapy were previously described in unpublished confidential reports now on file with the United States of America Typhus Commission.

INTRACELLULAR ANTIBODIES

In 1913 Much,¹ Manwaring² and others reported experimental evidence which led them to propose a tentative theory of "partial antibodies" to account for the phenomena of acquired immunity to tuberculosis. Specific agglutinins, precipitins and other so-called antibodies are found in the circulating blood; the theory assumed that the really essential bactericidal factors are found only in the fixed tissue cells. In support of this theory it was shown² that tubercle bacilli, while rapidly lysed in the peritoneal cavities of tuberculous animals, are not lysed in the animal's serum. Manwaring found that the acquired power of intraperitoneal lysis of tubercle bacilli cannot be transferred to normal animals even by total blood transfusion. The essential

1. Zinsser, Hans, and Schoenbach, E. B.: J. Exper. Med. **66**: 207 (Aug.) 1937.

2. Pinkerton, Henry, and Bessey, O. A.: Science **89**: 368 (April 21) 1939.

3. Greiff, Donald; Pinkerton, Henry, and Moragues, Vicente: J. Exper. Med. **80**: 561 (Dec.) 1944.

4. Greiff, Donald, and Pinkerton, Henry: Proc. Soc. Exper. Biol. & Med. **55**: 116 (Feb.) 1944.

1. Deycke, G., and Much, H.: München. med. Wchnschr. **40**: 119, 190, 1913.

2. Manwaring, W. H., and Bronfenbrenner, J. J.: J. Exper. Med. **18**: 601, 1913.

specific bacteriolysins present in the immunized peritoneal cells apparently are not given off in detectable amounts into the blood stream; or, if given off, they presumably are destroyed or otherwise rendered inactive in much the same way that leukocytic extract is inactivated by normal blood serum.³

This tentative theory of essential nonhumoral antibodies in acquired immunity to tuberculosis is supported by data recently reported by Chase⁴ of the Rockefeller Institute. Chase rendered guinea pigs hypersensitive to tuberculin by subcutaneous injection of killed tubercle bacilli suspended in liquid petrolatum. By the end of five to nine weeks, cutaneous reactivity to tuberculin was pronounced. Exudates were then induced in the peritoneal cavities by intraperitoneal injections of liquid petrolatum. After forty-eight hours the peritoneal cavities were washed out with heparinized Tyrode solution containing gelatin and 10 per cent normal guinea pig serum. The exudate thus obtained consisted mainly of large mononuclear cells. These cells were washed in serum-Tyrode solution and immediately injected intraperitoneally or intravenously into normal albino guinea pigs. The recipients were tested at daily intervals with old tuberculin. After a latent period of from two to three days following intraperitoneal injection (or twenty to thirty-six hours after intravenous injection) tuberculin hypersensitivity became established in the skin of the recipient. The passive hypersensitivity reached its maximum about forty-eight hours later. At this time the routine test dose of old tuberculin gives rise to a diffuse, indurated erythematous reaction. The hypersensitivity gradually fades after reaching this maximum.

Chase found that the intensity of the transferred cutaneous hypersensitivity varies with the volume of peritoneal cells and with the degree of sensitivity of the tuberculous donor. Similar transfer was never effected with the donor's serum or with the peritoneal exudates of nontuberculous guinea pigs. The peritoneal cells are inactivated by heating to 48 C. for fifteen minutes or by prolonged storage at refrigerator temperature. In addition to the peritoneal cells, cells from the spleen or lymph nodes of tuberculous animals are capable of passive transfer of tuberculin hypersensitivity.

Cellular transfer of acquired sensitivity was first demonstrated by Landsteiner⁵ in 1942. He found that exudates from the peritoneal cavities of guinea pigs previously sensitized to a number of simple chemical substances would cause homologous specific skin sensitivity if injected intravenously, intraperitoneally or intracutaneously into normal guinea pigs. The nature of the presumptive anaphylactic antibody present in these peritoneal cells is still undetermined.

Current Comment

DIPHTHERIA CAN BE ELIMINATED

In 1943 the death rate from diphtheria at all ages fell below 1 per hundred thousand for the first time.¹ At the same time the death rate in children under 10, in whom the disease is most frequent, has fallen below 5 per hundred thousand. Wide variation in the size of the diphtheria rates among children occurs, however, in different states: using the average figures for 1940-1942, Delaware without any deaths from diphtheria under 10 during these three years appeared at one extreme and, at the other, Arkansas and South Carolina with 13.7 deaths per hundred thousand and Oklahoma with a rate of 13.5. The available methods for control of diphtheria are sufficient to allow the complete elimination of this disease in the United States. An analysis of fatalities among children insured in a large life insurance company indicated that two factors were principally involved: delay in treatment (when the physician was not called until the fourth day of the disease or later) and the use of insufficient antitoxin. The application of modern immunization methods of susceptible persons on a countrywide basis would serve to eradicate the disease; meanwhile, emphasis on the importance of sufficiently early administration of antitoxin in adequate doses would help to prevent the unnecessary deaths of some 1,000 American children who still die of diphtheria annually.

ACTA SCANDINAVICA

In the past few months THE JOURNAL has received, thanks to more normal postal relations between Europe and the United States, a number of issues of the *Acta Scandinavica* for 1945 with an unusually large number of supplements. All the supplements, with the exception of one from Helsinki, Finland, are from Sweden, the one Scandinavian country to escape participation in the global war. The clinical papers and the supplements reflect the excellence of the medical institutions and the scientific character of clinical investigations usually found in the *Acta*. Of the ten supplements, eight are in English and two in German. Among the supplements to the *Acta medica* may be mentioned one by Nils Skiold on the clinical features and the origin of erythema nodosum, based on a study of 345 patients. Skiold shares the general concept of the condition as a nonspecific allergic phenomenon but would include in this concept erythema multiforme as well. Hans Forssman presents a study on hereditary diabetes insipidus in the course of which he had traced 5 pedigrees with 83 genebearers, involving investigation of 5,500 persons. An interesting study by Karl Axel Ekblom concerns a common but little recognized syndrome of "restless legs." Among the supplements to the *Acta chirurgica* may be mentioned an extensive study by S. Bruzelius on dicumarol from the Surgical Clinic in

3. Manwaring, W. H.: J. Exper. Med. 17: 409, 1913.

4. Chase, M. W.: Proc. Soc. Exper. Biol. & Med. 59: 134 (June) 1945.

5. Landsteiner, Karl, and Chase, M. W.: Proc. Soc. Exper. Biol. & Med. 49: 688, 1942.

1. Statistical Bulletin, Metropolitan Life Insurance Company, August 1945.

Lund. The frequency of thrombo-embolism was reduced to one third of that in the control groups, while the incidence of fatal pulmonary embolism has fallen from 0.49 per cent in two control groups to 0.16 per cent in the group treated prophylactically with dicumarol.

THE HEALTH OF THE CHINESE IN SAN FRANCISCO

The San Francisco department of public health has issued a report for the twenty year period 1924-1943 for Chinatown in San Francisco.¹ The population estimate for this district is 18,000. The Chinese as a group have continued to live under definitely substandard conditions in the area first chosen as a site for Chinatown. War industry brought a rise in income level, with more families able to assume higher living costs but unable to find better living quarters. Conditions of substandard housing and overcrowding continue to exist although the economic state has improved. In Chinatown the birth rate per thousand of population has fallen from a peak of 40.2 in 1924 to the low rate of 11.8 in 1937, with a gradual upswing to 18.8 in 1943. Since 1937 it has approximated more closely the rate for the entire city of San Francisco. In the past fifteen years Chinese births in hospitals have increased 320 per cent. At the same time, citywide births in hospitals increased 21 per cent. The younger American born Chinese parents are more eager to accept the maternity and child welfare programs, but the influence of the older foreign born parents continues to restrict educational programs. The Chinese infant mortality rates exceed those for the city as a whole. In 1936 the Chinese rate was exactly twice that for the city. In the following years the rate steadily declined to a level that compares favorably with the rest of the city. Respiratory infections and prematurity consistently constitute the principal causes of death in Chinese infants. The relative rank of the principal causes of death among the Chinese has altered since 1930, when tuberculosis indisputably outranked all others, with nephritis (chronic), heart disease, pneumonia and cancer following in order. In 1943 heart disease led the list, followed by cancer, tuberculosis, nephritis and pneumonia. In 1929 the average age at death for the city as a whole was 52.4 years and for the Chinese 41.7; in 1943 it was 57.7 and 50.2 respectively. The death rate has fallen from 22.4 per thousand in 1924 to 12.9 in 1943. The citywide rate was 12.7 in 1943. Except for tuberculosis there is comparatively little spread of contagious disease in the Chinatown area. When increased incidence of communicable diseases is reported for the entire city there is an increase in Chinatown as well, though to a comparatively less extent. In the last two citywide epidemics of poliomyelitis not a case was found among the Chinese. Few cases of influenza were reported from this area. Trachoma and acute conjunctivitis are reported with great frequency. Tuberculosis still constitutes one of the major health problems in the Chinese area. In 1939 the cases of tuberculosis

seen at the Chinese Health Center were far advanced. Now the cases seen are frequently of an early type that can benefit from efficient care. The death rate from pulmonary tuberculosis among Chinese shows about the same rate of decrease as that for the entire city, but the rate persists much higher for Chinatown. Any program of public health recommended for the entire city should be effective in Chinatown as well for the Chinese people, who have responded well to public health activities, which have been of prime importance in improving the health of the Chinese.

HEMORRHAGE FROM PUNCTURE BIOPSY OF THE LIVER

One great danger of biopsy of the liver, now practiced extensively by aspiration, is hemorrhage from the puncture. According to Raby¹ 7 instances of fatal hemorrhage have been reported, all in advanced or severe cases of carcinoma or pernicious anemia. Vitamin K was not given in any case before the puncture. The coagulation time was determined beforehand in only 1 case, and here clotting was delayed. Raby himself reports in detail a fatal intraperitoneal hemorrhage from puncture of a portal branch near the anterior surface of the right lobe of the liver in a woman aged 79 with jaundice of uncertain origin. The coagulation time before puncture was normal. The patient died thirty-six hours after the biopsy in spite of hemostatic treatment and blood transfusion. Raby also reports the death of a man aged 85 with senile dementia but without any hemorrhagic tendencies, which occurred three days after biopsy of the liver. The symptoms seemed obscure and postmortem did not reveal any primary cause of death. Bacteriologic examination was not made. Clearly, puncture of the liver is not without danger, especially in old persons. Precautions should never be neglected when puncture is indicated. Hemorrhagic tendencies should be excluded. Raby recommends also that the patient's blood group be determined before puncture and that the patient be watched closely after the puncture in order that transfusions may be made if necessary without delay.

N. N. R. 1945 AND REPRINT OF COUNCIL REPORTS FOR 1944 NOW AVAILABLE

Physicians, pharmacists, manufacturers of pharmaceuticals and indeed all who are interested in drug therapy will be pleased to know that these two annual publications of the Council on Pharmacy and Chemistry are now available. These volumes are indispensable to any one desiring to keep abreast of the latest advances in therapy. Their unusually late appearance is the result of wartime difficulties, including not only a shortage of paper and scarcity of mechanical personnel but also the fact that practically all Council members have been importantly and increasingly engaged in the war effort. The unselfish devotion of the Council members is worthy of the cause they represent—the support of rational therapy.

1. Geiger, J. C.; Miller, Roslyn C.; Welke, Hilda F., and Gilson, Eunice: *The Health of the Chinese in an American City*—San Francisco, San Francisco Department of Public Health, 1945.

1. Raby, K.: *Complications and Dangers of Liver Biopsy*, *Nord. med.* 24: 2161 (Dec. 8) 1944.

MEDICINE AND THE WAR

ARMY

ARMY MEDICAL RESEARCH AND DEVELOPMENT BOARD FORMED

A board to be known as the Army Medical Research and Development Board was constituted in the Office of the Surgeon General on September 1. The board is to be responsible for the planning and general supervision of all Medical Department research and development activities. Its membership will include the chiefs of the various professional services and divisions of the Office of the Surgeon General, the Air Surgeon, the Ground Surgeon, the chairman of the Division of Medical Sciences, National Research Council (by invitation), and the chairman of the Committee on Medical Research, Office of Scientific Research and Development (by invitation). The board has two operating divisions, the Research Division and the Development Division, to carry out its plans.

It is the intent of the Surgeon General to carry on an active program of research and development during the postwar period, and the new board should provide the means for maximum coordination of effort within the military service and cooperation with civilian and federal research agencies. The immediate tasks facing the board are three in number. Essential research must be continued in the existing Medical Department research and development laboratories in spite of the personnel difficulties of the period of demobilization. Plans must be made and implemented for the continuation or actual expansion of research and development in the postwar period. The demobilization of the Office of Scientific Research and Development necessitated finding other sponsorship for those CMR research contracts which warrant continuation even though hostilities have terminated. A sizable group of these contracts will be taken over by the Medical Department and administered by the Army Medical Research and Development Board.

HOSPITALS NAMED FOR REFRESHER TRAINING COURSES

Major Gen. Norman T. Kirk, Surgeon General of the Army, recently notified the commanding officers of the following hospitals that their medical services had been approved for the professional refresher training courses of Medical Corps officers to extend over a twelve weeks period:

Cushing General Hospital, Framingham, Mass.
Mason General Hospital, Brentwood, Long Island, N. Y.
Valley Forge General Hospital, Phoenixville, Pa.
Kennedy General Hospital, Memphis, Tenn.
Newton D. Baker General Hospital, Martinsburg, W. Va.
Percy Jones General Hospital, Fort Custer, Michigan.
Winter General Hospital, Topeka, Kan.
McCloskey General Hospital, Temple, Texas.
DeWitt General Hospital, Auburn, Calif.

Medical Corps officers desiring refresher training in neuropsychiatry will be permitted to serve the entire twelve weeks in the neuropsychiatric services and to rotate through the various wards of the neuropsychiatric services in order to gain experience in all phases of neuropsychiatry.

PACIFIC BATTLE CASUALTIES TO BE RETURNED BY END OF YEAR

The War Department recently announced that most of the 3,000 battle casualties still remaining in the Pacific will be returned to the United States within sixty days and all the other transportable casualties by Christmas. The majority will travel on hospital ships and troop transports, but some will return by air. Ten U. S. Army hospital ships, seven formerly part of the twenty-one ship mercy fleet which brought home 86,422 combat sick and wounded from the Atlantic, now are speeding the return of Pacific battle casualties.

Since the first army hospital ship *Acadia* docked with the first battle casualties in June 1943 the Charleston Port of Embarkation, now "port of call" for hospital ships in the Atlantic, has debarked approximately 11,000 since May.

Six of the army hospital ships are converted Liberties; the others are former troopships and cargo and passenger liners. All the ships are staffed by U. S. Army Medical Department personnel and, with the exception of the *Hope*, *Comfort* and *Mercy*, are crewed by merchant marine seamen employed by the Transportation Corps.

TROOPS TO BE VACCINATED AGAINST INFLUENZA

All army troops in the middle Pacific command will be vaccinated against influenza as part of a worldwide campaign by the Surgeon General to prevent a possible epidemic of this disease, in which mass movements of army personnel to and from the continental United States could be a contributing factor. According to Lieut. Col. T. G. Ward, preventive medicine officer, middle Pacific Surgeon's Office, medical officers hope to lessen the severity of any influenza epidemic such as the one which swept the world in November 1918. Millions of army troops, either replacements in occupation armies or combat veterans going home, will be on the move. Through the use of this new vaccine it is hoped to prevent influenza among them.

ARMY AWARDS AND COMMENDATIONS

Major Matthew Levine

The Bronze Star was recently awarded to Major Matthew Levine, formerly of Brooklyn, who served on the Army Hospital Ship *Emily H. M. Wedder* from August 1944 to March 1945. According to the citation accompanying the award Major Levine "demonstrated outstanding professional qualities in support of combat operations. During the invasion of southern France, in the Italian combat zone and later during the landings on Leyte and Luzon in the Philippines this hospital ship participated in the evacuation of wounded from the established beachheads. Aware of the many problems arising from such an important mission, without regard for his personal welfare and with an all consuming zeal for rendering all service possible to our wounded, he skilfully organized the personnel of the Neuropsychiatric Service into a highly efficient unit, inspiring them with confidence in the mission to be performed. His sole aim was to save lives and to bring comfort to the sick and wounded transported aboard the ship. He succeeded in this purpose by utilizing every available means of medical skill and knowledge. His treatment of mentally disturbed patients by neuropsychiatric therapy contributed notably to the successful mission of this ship and reflects great credit on the Medical Corps." Dr. Levine graduated from Long Island College of Medicine, Brooklyn, in 1934 and entered the service July 27, 1942.

Lieutenant Colonel Benjamin L. Camp Jr.

The Legion of Merit was recently awarded to Lieut. Col. Benjamin L. Camp Jr. for his exceptionally successful execution of medical operations connected with the Allied occupation of Rome. He was cited "for exceptionally meritorious conduct in the performance of outstanding service against the enemy in Italy from Feb. 1, 1944 to May 27, 1945. . . . Also for his brilliant conception of medical planning operations and exceptionally successful execution of medical operations connected with the Allied occupation of Rome and the

exceptionally high degree of diplomacy and integrity exhibited which resulted in the optimum of cooperation between Allied and civil medical authorities." Dr. Camp was previously commended by Major Gen. Morrison C. Stayer, surgeon general of the Mediterranean Theater of Operations. This commendation read, in part, "Your problems as surgeon of the Rome Area Allied Command were many and vexing and the manner in which you and your personnel have solved them and safeguarded the lives and health of American troops is worthy of commendation." Dr. Camp graduated from Northwestern University Medical School, Chicago, in 1933 and entered the service Feb. 28, 1941.

Colonel Clifford V. Morgan

The Oak Leaf Cluster to the Legion of Merit was recently awarded to Col. Clifford V. Morgan, formerly of Washington, D. C., "for exceptionally meritorious conduct in the performance of outstanding services as deputy general purchasing agent, Forward Echelon, Headquarters Communications Zone, European Theater of Operations, from Feb. 25, 1944 to Aug. 7, 1944." The citation accompanying the award explained that "Colonel Morgan supervised and coordinated general purchasing planning as far as coordination was necessary with the 21st Army Group (British), First United States Army Group, First United States Army, Third United States Army Western Task Force, 9th Air Force and agencies of the Communications Zone staff. He ably guided and facilitated purchasing planning for overseas operations and formulated a clear and concise general purchasing plan consistent with directives of higher authority. Colonel Morgan rendered outstanding services on the continent not only by advising and personally assisting the Advance Section but also by attaching key personnel to that section for training purposes." Dr. Morgan graduated from the University of Nebraska College of Medicine, Omaha, in 1927 and entered the service July 15, 1927.

Brigadier General Royal Reynolds

Brig. Gen. Royal Reynolds, formerly of Washington, D. C., was recently awarded the Legion of Merit. The citation read "He served as commanding general of the Kennedy General Hospital, Memphis, Tenn., from June 1942 to January 1945. Assuming command when the construction was in its initial phase and when the need for hospital beds for our overseas wounded was most acute, his unusual foresight and planning ability accelerated the building program to such a degree that the necessary hospital facilities with 1,500 beds were in use by Jan. 1, 1943. Authorized to double the capacity in the fall of 1942, construction was begun in October and the new project was in operation by May 1943. A further construction project, instituted late in 1944, increased the bed capacity to 4,387. The rare ability shown by him in providing medical care of the highest quality and unusual efficiency of operation while simultaneously administering his hospital and supervising its growth resulted in a general hospital of outstanding merit." General Reynolds graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1906 and entered the service May 20, 1942.

Lieutenant Colonel Clyde B. Meffert

The Legion of Merit was recently awarded to Lieut. Col. Clyde B. Meffert, formerly of Cedar Rapids, Iowa, "for exceptionally meritorious conduct in the performance of outstanding services as chief of surgical service, 109th Evacuation Hospital, Third U. S. Army, from April 7, 1944 to Jan. 28, 1945. Lieut. Col. Meffert exhibited an unusually high degree of professional skill and exceptional administrative and organizational abilities in the fulfillment of his task. His performance of service made it possible for this organization, with only one week of unit training and two weeks of actual maneuvering, to establish an efficiently functioning hospital. Through Lieutenant Colonel Meffert's untiring efforts this superior surgical service was maintained throughout operations." Dr. Meffert graduated from the State University of Iowa College of Medicine, Iowa City, in 1931 and entered the service June 16, 1943.

Lieutenant Colonel Nevin B. Anderson

Lieut. Col. Nevin B. Anderson, formerly of Des Moines, Iowa, was recently awarded the Legion of Merit for services in North Africa, Italy and France from Sept. 1, 1943 to Dec. 31, 1944. The citation accompanying the award stated that it was given "for exceptionally meritorious conduct in the performance of outstanding services in North Africa, Italy and France from September 1943 to Dec. 31, 1944. Commanding a unit designated for exclusive operation in neuropsychiatry, Lieutenant Colonel Anderson, despite critical shortages of specialists and insufficiencies of suitable facilities, displayed marked ingenuity and efficiency in planning and developing an unprecedented service that paid untold dividends in the treatment of mental cases in two theaters of operation. Utilizing ex-line officers and noncommissioned personnel he provided an occupational therapy program which not only expedited the rehabilitation and restoration of patients but also greatly increased the facilities of his installation. Through the application of sound principles and superior professional skill, Lieutenant Colonel Anderson contributed immeasurably to the success of the combat forces." Dr. Anderson graduated from the State University of Iowa College of Medicine, Iowa City, in 1920 and entered the service Jan. 13, 1941.

Colonel James W. Bass

Col. James W. Bass, formerly of Dallas, Texas, was recently awarded the Legion of Merit for "exceptionally meritorious achievement in the performance of outstanding services in the Southwest Pacific Area, from April 12, 1942 to June 1, 1945. As chief of the Preventive Medicine Section, United States Army Services of Supply, Colonel Bass was responsible for the planning, organizing and supervision of the statistical and preventive medicine program of the theater. Despite formidable problems incident to the medical care of large numbers of men under hazardous and deleterious tropical conditions, he carried a sound and comprehensive program through the formative stage to completion in an exceptionally short period of time. In addition, he developed a department to maintain vital statistics and medical records of inestimable value to the service. As chief inspector, he personally supervised much of the field work of the early operational period and was largely responsible for sanitation measures essential to the maintenance of the present high level of health within the theater. By his professional capability, inspiring leadership and devotion to duty, Colonel Bass has substantially aided in the conservation of manpower throughout the Southwest Pacific Area." Dr. Bass graduated from Baylor University College of Medicine, Dallas, in 1925 and entered the service May 15, 1941.

Captain Rae N. Foster

Capt. Rae N. Foster, formerly of Portland, Ore., was recently awarded the Bronze Star "for meritorious service in connection with military operations against an enemy of the United States during the period June 6, 1944 to May 7, 1945. Captain Foster, serving as an anesthetist with a general surgical team, 4th Auxiliary Surgical Group, distinguished himself by his outstanding performance of duty. The professional skill and untiring energy he displayed, his resourcefulness and loyal devotion to duty reflect great credit on himself and on the military service." Dr. Foster graduated from the College of Medical Evangelists, Loma-Linda, Calif., in 1936 and entered the service July 26, 1941.

Captain Leonard M. Klein

The Bronze Star was recently awarded to Capt. Leonard M. Klein, formerly of Boston. The citation stated that "during the period May 7-May 12, 1945 Captain Klein remained on duty constantly, day and night, at . . . an aid station . . . near Hot Corners, Luzon, Philippine Islands. Because of his untiring efforts and his superior knowledge and skill, Captain Klein was responsible for saving many sick and wounded from long periods of convalescence or possible death. Captain Klein's attention to duty was in accordance with the highest standards of his profession and office." Dr. Klein graduated from Tufts College Medical School, Boston, in 1940 and entered the service Aug. 6, 1942.

Colonel Robert F. Bradish

The Legion of Merit was recently awarded to Col. Robert F. Bradish, formerly of Washington, D. C., who as post surgeon, New Orleans Port of Embarkation, from September 1943 to April 1945, displayed a high degree of organizing and professional ability in establishing and coordinating a highly efficient medical service for both military and civilian personnel within the command, resulting in substantially lowering the noneffective sick rate and in effecting noteworthy reduction in medical operating personnel. The citation accompanying the award goes on to state that "his work in planning, supplying and operating all troop ship hospitals assigned to New Orleans Port of Embarkation and in the evacuation of patients of all categories from overseas areas served by the port was characterized by keen perception of existing conditions and skilful approach to the voluminous problems involved. The resourcefulness, seasoned technical judgment and exceptional professional ability displayed by him contributed materially to the successful operations of the port." Dr. Bradish graduated from the University of Vermont College of Medicine, Burlington, in 1926 and entered the service July 16, 1926.

Captain William T. Layman

The Bronze Star was recently awarded to Capt. William T. Layman, formerly of Hagerstown, Md., "for meritorious service in direct support of combat operations from July 28, 1944 to May 8, 1945 in France, Belgium, Holland and Germany. Although many bridging operations were carried out under observed enemy artillery fire, Captain Layman remained at the

site of operations, rendering immediate aid as battalion surgeon to the wounded. By his tireless efforts, disregard for his own personal safety and fearless devotion to duty, he was an inspiration to the men working under him and reflected much credit on himself and the armed forces." Dr. Layman graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1939 and entered the service May 19, 1942.

Captain James S. Walker

Capt. James S. Walker, formerly of Indianapolis, was recently awarded the Bronze Star for "thirty months' meritorious service with the 46th Engineers, and treating wounded under enemy fire during the landing on Leyte in October 1944." Dr. Walker is now chief of the ear, nose and throat section of the 59th Station Hospital in the Philippines. He graduated from Indiana University School of Medicine, Indianapolis, in 1939 and entered the service Oct. 22, 1941.

Captain Alfred R. Brin

The Certificate of Merit was recently awarded to Capt. Alfred R. Brin, formerly of Terrell, Texas, for "having devoted his time selflessly to duties in an outstanding manner in caring for his many patients during the period from June 1944 to June 1945 in Malmesbury, Wilts, England, resulting in outstanding accomplishments and substantial contributions to the professional field of urology." Dr. Brin graduated from the University of Texas Medical Branch, Galveston, in 1938 and entered the service Sept. 24, 1940.

NAVY**NAVY HOSPITALS FOR ASTHMATIC PATIENTS**

The Bureau of Medicine and Surgery, Navy Department, has allocated a hospital facility devoted in a special manner to the study and care of patients with asthma. The hospital is located in Banning, Calif., and an efficient staff under specialists trained in allergy has been assigned. The area was selected because of environmental conditions conducive to the advancement of patients afflicted with allergic diseases. The high altitude, the equable climate and the low pollen and mold counts make the facilities ideal for a control study of asthma. Over 200 asthmatic patients were recently admitted to the hospital, and preliminary studies have revealed that these patients may be catalogued into three general classes: (1) those whose allergy (asthma) existed prior to enlistment (EPTE), (2) those in whom it did not exist prior to enlistment (DNEPTE) and (3) those whose asthma did not exist prior to enlistment, although a state of hypersensitivity did exist prior to enlistment (EPTE aggravated). Groups 1 and 2 represent 65 per cent and 15 per cent respectively of the patient load, whereas group 3, 20 per cent, represents cases of hypersensitivity prior to enlistment, although no manifestations of asthma were present until after the patient entered the service. Most of the men had seen service overseas, chiefly in New Guinea and in the Philippine, Solomon and Admiralty Islands, and approximately 90 per cent of them had their affliction aggravated by this type of foreign duty.

Although present facilities permit only limited investigation and treatment, more extensive work, particularly regarding offending factors and desensitization studies, are planned for the immediate future.

NAVY AWARDS AND COMMENDATIONS**Commander Stephen Eugene Flynn**

The Bronze Star was recently awarded to Comdr. Stephen Eugene Flynn, formerly of Washington, D. C., "for distinguishing himself by meritorious conduct in the line of his profession while serving as senior medical officer of the U. S. S. *Columbia* during the assault and bombardment operation at Lingayen Gulf, Luzon, Philippine Islands, during Jan. 6-9, 1945. He

administered his department with such excellent foresight that when the *Columbia* was hit by enemy dive bombers January 6 and 9, the large number of casualties which resulted were handled with outstanding efficiency. During the entire period while the ship was under repeated and determined enemy air attacks he worked continuously and tirelessly caring for the wounded and dying. He showed outstanding alertness and initiative by providing, during this trying period with a large number of wounded, for the normal routine of the medical department, even to the extent of performing an emergency appendectomy on the night of January 7. His service and conduct throughout distinguished him among those performing duties of the same character." Dr. Flynn graduated from Creighton University School of Medicine, Omaha, in 1930 and entered the service Dec. 10, 1931.

Lieutenant Max R. Long

The Silver Star was recently awarded to Lieut. Max R. Long, formerly of Indianapolis, "for conspicuous gallantry and intrepidity in action against the enemy as shore party evacuation officer during operations on Saipan. During the morning of June 16, 1944, while the beach from which he was operating was under direct artillery fire, Lieutenant Long, with utter disregard for his own personal safety, continued rendering aid, performing necessary surgery and personally attending to the evacuation of casualties. His efforts, while thus exposed to enemy fire, were a source of inspiration to his own men and a comfort to casualties passing through his hands. Working continuously throughout the first seventy-two hours, he succeeded in evacuating approximately 1,200 wounded men from a heavily congested beach." Dr. Long graduated from Indiana University School of Medicine, Indianapolis, in 1940 and entered the service March 21, 1942.

Lieutenant Commander John W. Stevens

The Navy and Marine Corps Medal was recently awarded to Lieut. Comdr. John W. Stevens, formerly of DuQuoin, Ill., for heroism as battalion surgeon during an aerial bombardment off Roi and Namur in February 1944. The presentation was made in the presence of the entire Georgia Pre-Flight School medical staff, Athens, Ga. Dr. Stevens graduated from the University of Illinois College of Medicine, Chicago, in 1931 and entered the service May 21, 1942.

MISCELLANEOUS

HOSPITALS NEEDING INTERNS
AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service.

(Continuation of list in THE JOURNAL, September 29, page 359)

CONNECTICUT

New Britain General Hospital, New Britain. Capacity, 258; admissions, 8,954. Dr. W. Weston Benjamin, Managing Director (interns; residents—mixed service, April 1, 1946).

MICHIGAN

Saginaw General Hospital, Saginaw. Capacity, 151; admissions, 4,024. Mr. R. E. Raper, Superintendent (interns).

MINNESOTA

Hibbing General Hospital, Hibbing. Capacity, 152; admissions, 3,556. Sister M. Assumpta, Administrator (residents—mixed service).

NEW YORK

Triboro Hospital, Jamaica. Capacity, 557; admissions, 514. Dr. Henry I. Finberg, Medical Superintendent (residents—tuberculosis).
Bronx Hospital, New York City. Capacity, 409; admissions, 10,341. Dr. A. A. Karan, Director (8 interns, April 1, 1946).

OHIO

Lutheran Hospital, Cleveland. Capacity, 160; admissions, 4,525. Mr. Lee S. Lanpher, Superintendent (interns, April 1 and July 1, 1946).

PENNSYLVANIA

Women's Homoeopathic Hospital, Philadelphia. Capacity, 200; admissions, 3,197. Miss Mary A. Smith, Administrator (resident—male or female).

UNRRA PROGRAM FOR WINTER MEDICAL
CARE IN U. S. OCCUPIED
GERMANY

Health officers of the United Nations Relief and Rehabilitation Administration have recently completed an expanded program of winter medical care for the remaining displaced persons in assembly centers in U. S. occupied Germany. Care will include full scale hospital and dispensary services and an extensive schedule of preventive medicine based on standard public health procedures. The work will go forward under the supervision of the Public Health Branch of the U. S. Military Government. Approximately 500,000 displaced persons are said to be in the U. S. occupied zone at the present time.

Anticipating a severe winter with critical fuel shortages in Germany, UNRRA doctors are immunizing the displaced persons for typhus, diphtheria, typhoid and smallpox. Supplies of the sulfonamide drugs are being stocked for pneumonia. The possibility of typhoid with the spring thaws is also being met now by sanitation measures to check the disease at its sources.

Lieut. Col. David C. Elliott of Cincinnati, chief UNRRA medical officer for the zone, stated that, while it is difficult to forecast accurately the winter health prospects of the displaced persons, reliance has been placed on established health service techniques of preparing in advance for the possibility of critical developments.

UNRRA REPORTS ON THREATENED
TYPHOID EPIDEMIC IN
ALBANIA

Cooperative efforts between authorities in Tirana, Albania, and officials of the United Nations Relief and Rehabilitation Administration broke down a threatened epidemic of typhoid in the capital city of Albania and saved an unknown number of lives. The war had doubled the city's normal population of 40,000 persons, with consequent overcrowding and strain on the city's water and sanitary facilities. When 600 typhoid cases were reported in the outbreak, the Albanian minister of health appealed to Dr. W. E. Thompson of England, UNRRA's director of health attached to its Albanian mission. Dr. Thompson

cabled UNRRA area headquarters at Caserta for emergency shipment of 150,000 units of typhoid vaccine. All available medical personnel were mobilized, and residents of the city were vaccinated by the thousands.

WARTIME GRADUATE MEDICAL MEETINGS

The following subjects and speakers for Wartime Graduate Medical Meetings have just been announced:

Illinois

Station Hospital, Camp Grant: Infections of the Hand, Dr. Sumner Koch, November 21.

Regional Hospital, Chanute Field, Rantoul: Traumatic Intracranial Hemorrhage, Dr. Paul C. Bucy, November 14.

Station Hospital, Fort Sheridan: Types of Diabetes Mellitus and Their Treatment, Dr. Arthur R. Colwell, November 14.

Gardiner General Hospital, Chicago: Problems in Returning to Practice in Metropolitan Area, Dr. Francis Strauss, November 7.

Mayo General Hospital, Galesburg: Surgical Treatment of Gastroduodenal Ulcer, Dr. Lester R. Dragstedt, November 21.

Vaughan General Hospital, Hines: A Method for Urologic Diagnosis, Dr. D. K. Rose, November 17.

Indiana

Billings General Hospital, Fort Benjamin Harrison: The Use of Chemotherapeutics and Surgery in Chronic Infections of Bone, Dr. Albert J. Key, November 13.

Tennessee

Kennedy General Hospital, Memphis: Infections Hepatitis, Dr. M. Herbert Barker and Dr. Thomas F. Francis, November 13; Protein Metabolism and Surgical Convalescence, Dr. Robert Elman, November 23.

Washington

Baxter General Hospital, Spokane: Preparation of the Mouth for Immediate Dentures, Major Elmer O. Hinman, November 9; War Deafness, Capt. Robert E. Priest, November 16; Keratitis Caused by Emetine Hydrochloride, Major Everett B. Muir, November 16; Tropical Skin Disease, Capt. William Wolf, November 23.

Wisconsin

Station Hospital, Camp McCoy: The Nutrition of the Recalcitrant Patient, Dr. Robert W. Keeton, November 14; Peptic Ulcer, Dr. Walter L. Palmer, November 28.

Station Hospital, Truax Field, Madison: The Clinical Significance of Hoarseness, Dr. Paul Holinger, November 7; Diabetes, Dr. Elmer L. Sevringhaus, November 21.

VETERANS

MAGNUSON BECOMES ASSISTANT
TO HAWLEY

Dr. Paul B. Magnuson, Chicago, has accepted a post in Washington as assistant to Major Gen. Paul R. Hawley, Surgeon General of the Veterans Administration. His duties will be connected with a plan to appoint civilian doctors to veterans' hospitals, especially civilian doctors who have seen service in the Army in the second world war, and whose record indicates that they have been devoted to their duties and service to the soldier.

Dr. Magnuson has taken a leave of absence from his duties at Northwestern University Medical School as professor of bone and joint surgery and will devote his full time during the next few months to this assignment. He is not permanently giving up practice or teaching in the medical school and plans to return to his practice as soon as the organization of veterans' care is well under way. This, as indicated now, should not be more than six months.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Name	Rank	Address	Name	Rank	Address
Alabama			District of Columbia		
Askev, William M. Jr., Major, Greenville.			Blair, Montgomery, Lt. Col., 84 Kalorama Circle, Washington.		
Nungester, Garrold H., Capt., 402 Canal St., Decatur.			Coleman, F. T., Major, 1325 Kennedy St., N.W., Washington.		
Williams, Ernest B., Capt., 7 Audubon Road, Montgomery.			Farrell, George R., Major, 1830 Eye St., N.W. Washington.		
Arizona			Gould, E. A., 1st. Lt., Garfield Mem. Hosp. 10th & Florida Ave., Washington.		
Dienger, Bernard C., Capt., La Posada, Winslow.			Irving, R. H., Capt., 810 New Jersey Ave., N.W., Washington.		
Perkins, Frederick P., Lt. Col., Phoenix.			Jarman, Bernard L., Lt. Col., 1726 Eye St. N.W., Washington.		
Shapiro, David, Capt., 1105 6th Ave., Safford.			Jennings, Edward C., Capt., Mt. Alto Hospital, Washington.		
Shultz, William G., Lt. Col., 602 Valley Bank Bldg., Tucson.			Katzman, H., Major, 4550 Connecticut Ave., N.W., Washington.		
Shupe, Reed D., Lt. Col., 404 Luhrs Bldg., Phoenix.			Magee, W. d'A., 1st. Lt., 5038 Reno Rd. N. W., Washington.		
Truman, George C., Capt., 108 W. 4th St., Mesa.			Martin, C. J., Capt., Gallinger Municipal Hosp., Washington.		
California			Mendel, Charles L., Major, 119 R St. N.E., Washington.		
Adams, George F., Major, 55 Palm Ave., San Francisco.			Osborn, Raymond A., Capt., 811 Taylor St. N.W., Washington.		
Barbour, Nathan P., Col., Medico-Dental Bldg., Stockton.			Reichard, Morris, Major, 3221 Connecticut Ave., Washington.		
Beuchamp, Mark L., Capt., 212 Quincy Ave., Long Beach.			Sullivan, A. J., Lt. Col., 3413 Texas Ave., S.E., Washington.		
Briner, Charles C., Major, 1112 Lincoln Way, Auburn.			Todd, Oswald V., Major, St. Elizabeths Hosp., Washington.		
Burns, Herschel S., Lt. Col., 265 Naomi Ave., Arcadia.			Florida		
Collins, James W., Capt., Stanislaus County Hosp., Modesto.			Berry, Courtlandt D., Capt., 316 Exchange Bldg., Orlando.		
Greene, William W., Major, 2965-25th Ave., San Francisco.			Cafaro, Secondo R., Major, 31 Fullwood Drive, St. Augustine.		
Husser, George, Capt., 827-32nd St., Richmond.			Girardin, Alphonse L. Jr., Capt., 915 Monlo Rd., Ft. Myers.		
Mitchelson, David D. S., Capt., 10350 LaGrage, Los Angeles.			Hogg, Bruce M., Major, 4031 Kiaora St., Coconut Grove.		
Mudry, Joseph, Capt., 383 W. 6th St., San Pedro.			Johnson, Wince A. J., Capt., 833½ No. Florida Ave., Lakeland.		
Nagel, Sherman A., Jr., Capt., 1200 N. State St., Los Angeles.			Ledrew, Frederick, Lt. Col., 7611 Collins Ave., Miami Beach.		
Norberg, Raymond W., Major, 1632 Draper St., Kingsbury.			Rose, Joseph, Major, 1345 Talbot Ave., Jacksonville.		
Perez, E. R., Lt. Col., 640 Junipero Sella Blvd., San Francisco.			Rubin, Nathan S., Lt. Col., 11 W. Garden St., Pensacola.		
Pritchard, Jacob L., Lt. Col., 311 S. 1st St., San Jose.			Sandberg, Thowald D., Major, 1210 Sevilla, Coral Gables.		
Ray, Louis O., Capt., Tule Lake.			Sayre, Robert F., Capt., Jasper.		
Reinard, Louis, Capt., 3762 Amesbury Rd., Los Angeles.			Scarborough, Chafee A., Capt., 460 N.E. 52nd Terr., Miami.		
Richards, Ezra E., Major, 1214 Burlingame Ave., Burlingame.			Sisler, Bruce H., Lt. Col., Miami Beach.		
Robertson, Donald L., Capt., 1621 Elmwood Ct., Modesto.			Turberville, Joe I., Capt., Century.		
Rosoff, Leonard, Capt., Apt. 4, 120 S. Flores, Los Angeles.			Wentzel, Willet E., Capt., 619 25th St., Bradenton.		
Schumacher, George O., Major, 255 San Bernardino St., Loma Linda.			Georgia		
Smith, Charles C., Capt., Providence Hosp., Oakland.			Bowden, Ralph O., Capt., 24 W. Gaston St., Savannah.		
Soderstrom, Edwin M., Major, 49-22nd St., Merced.			Brown, Felix B., Major, 17-E 52nd St., Savannah.		
Steven, Robert A., Major, 34 San Andreas Way, San Francisco.			Burke, Benjamin R., Major, 1996 Ponce de Leon Ave., Atlanta.		
Stickler, Joseph H., Major, 4031 Hampstead Rd., Flintridge, Pasadena.			Christensen, L. M., 1st. Lt., Fla. Sanitarium & Hosp., Orlando.		
Syman, Leo W., Capt., Shell Beach.			Curtis, Walker L., Capt., College Park.		
Tucker, Marshall B., Capt., 5847 Chelton Drive, Oakland.			Ferguson, Anderson D. Jr., Capt., West Point.		
Van de Carr, Francis R., Capt., 51 Prospect Road, Piedmont.			Ferguson, Ira A., Col., 353 Argonne Drive, N.W. Atlanta.		
Weinberg, Samuel J., Major, 231 Thurston Ave., Los Angeles.			Frankel, David E., Major, Ware Co. Hosp., Waycross.		
White, Thomas R., Major, 520 Sunset Drive, Redlands.			Graham, Wistar L., Jr., Capt., Univ. Hosp., Augusta.		
Whiteley, Robert K., Major, 571 Hamilton Ave., Palo Alto.			Holloway, C. E., Lt. Col., 269 Moreland Ave., N.E., Atlanta.		
Zide, Harry A., Major, 1911 Wilshire Blvd., Los Angeles.			Kessler, Sidney N., Capt., 1241 Virginia Ave., N.E., Atlanta.		
Colorado			Levin, Jack M., Major, 861 Mentelle Dr., N.E. Atlanta.		
Allen, Kenneth D. A., Col., 452 Metropolitan Bldg., Denver.			Linch, Albert O., Major, 943 Rosedale Rd., N.E. Atlanta.		
Magid, Moreton A., Major, Room 730 Republic Bldg., Denver.			Martin, John D., Jr., Lt. Col., 485 Claire Drive N.E., Atlanta.		
Richards, Robert B., Capt., 624 E. Beaver Ave., Ft. Morgan.			Montgomery, John C., Major, Vet's Admn., Augusta.		
Spangler, Edward L., Major, Ouray.			Mulherin, Philip A., Lt. Col., 2421 Walton Way, Augusta.		
Verplog, Ralph H., Lt. Col., 2968 Ash St., Denver.			Musarra, Elmer A., Major, 121 Wright St., Marietta.		
Wolfe, Joseph, Major, 850 So. Franklin St., Denver.			Illinois		
Connecticut			Katz, Charles J., Major, 133 No. Scoville Ave., Oak Park.		
Albom, Jack J., Major, 177 Ferry St., New Haven.			Landes, Ralph R., Capt., Michael Reese Hosp., Chicago.		
Berman, Bernard A., Major, 161 North Main St., Waterbury.			Marino, Joseph D., Capt., 3225 So. Wells St., Chicago.		
Buckhout, G. A., Capt., 127 Fairmount Terrace, Bridgeport.			Marquardt, T. R., Capt., 117 W. St. Charles Rd., Lombard.		
Burness, Sidney H., Lt. Col., 286 Fern St., West Hartford.			Mead, Newton C., Major, 803 Simpson St., Evanston.		
Centrone, Patrick A., Capt., 146 Cross St., Middletown.			Meltzer, Herman L., Lt. Col., 800 North Side Sq., Clinton.		
Chester, Lewis, Capt., 357 Allen St., New Britain.			Miller, Charles H., Jr., Major, Moweaqua.		
Cogland, John L., Lt. Col., 600 Walcott Hill Rd., Wethersfield.			Murphy, Francis C., Capt., 1835 W. Harrison St., Chicago.		
Dionne, Ulric A., Capt., Columbia Blvd., Waterbury.			Potekin, Jesse S., Capt., 4000 W. Washington, Chicago.		
Hanley, Joseph B., Capt., Todd Hollow Road, Terryville.			Radymski, S. F., Lt. Col., 5915 N. California Ave., Chicago.		
Harwood, Paul H., Jr., Capt., Southport.			Raider, Jack H., Major, 4137 N. Troy St., Chicago.		
Koffler, Arthur, 1st Lt., 90 Glenbrook Road, Stamford.			Sack, Charles I., Capt., 8149 S. Vernon Ave., Chicago.		
Lovell, William H., Jr., Major, 112 Church St., Wethersfield.			Schaller, Edward H., Capt., 305 E. 4th St., Waterloo.		
Merriam, Philip G., Capt., 102 Prospect St., New Britain.			Smith, Louis D., Lt. Col., 1640 E. 50th St., Chicago.		
Miller, Harry B., Major, 20 Colebrook St., Hartford.			Tasley, B. C., Jr., Lt. Col., 101 E. Chestnut St., Robinson.		
Mills, Clifford W., Capt., % 58 Washington Ave., Stamford.			Waller, James B., Lt. Col., 445 S. Fairview, Decatur.		
Shenker, Benjamin M., Capt., 94 Irving St., Hartford.			Weiner, Sam F., Capt., 836 E. 45th St., Chicago.		
Silver, Gershon B., Major, 125 Mansfield St., Hartford.			Weir, Edgar W., Major, Atwood.		
Wallace, Victor G. H., Lt. Col., Butlers Island, Darien.			Whitfield, Harvey J., Major, 606 E. 50th Pl., Chicago.		
Wentworth, John H., Major, 240 Oliver Rd., New Haven.			Winer, Allen E., Capt., 3703 W. Grenshaw Ave., Chicago.		
			Winskunas, Felix C., Capt., 7004 S. Fairfield Ave., Chicago.		

PHYSICIANS SEPARATED FROM SERVICE

Name	Rank	Address	Name	Rank	Address
Indiana			Kansas		
Allen, Frederick K., Capt.,		Fredericksburg.	Bena, James H., Major,		Smith Clinic, Pittsburg.
Aucerman, Charles J., Capt.,		304 W. High, Montpelier.	Blank, John N., Major,		Buhler.
Brookie, Roger W., Major,		16 S. Center St., Flora.	Davis, Donald R., Capt.,		910 Second St., Dodge City.
Cassidy, John L., Major,		1608 Brookside Dr., Evansville.	Christmann, Marshall E., Capt.,		Pratt.
Challman, William B., Capt.,		631 Locust St., Mt. Vernon.	Cushing, Robert L., Major,		1½ N. Main St., Ft. Scott.
Clouse, Paul A., Major,		2217 W. Illinois St., Evansville.	Haigler, Frederick H., Jr., Lt. Col.,		Box 23, Cherokee.
Du Bois, Ramon, Capt.,		West Point.	Hoover, Galen M., Lt. Col.,		324 West 6th St., Junction City.
Dykhuizen, T. A., Capt.,		608 E. Washington St., Frankfort.	Hunter, Kenneth R., Capt.,		Lebo.
Everly, Ralph V., Capt.,		6118 Norwaldo St., Indianapolis.	Jewell, Thomas C., Capt.,		Medicine Lodge.
Firestein, Ray, 1st Lt.,		2010 N. Meridian St., Indianapolis.	Kent, Clifford F., Major,		RFD 1, Mission.
Gates, George E., Capt.,		517 E. Altgeld St., South Bend.	Miller, Clyde W., Capt.,		352 So. Rutan, Wichita.
Gillespie, Jacob E., Capt.,		523 Hume Mansur Bldg., Indianapolis.	Moorhead, Frank A., Capt.,		709 Main St., Neodesha.
Gregg, Albert F., Major,		835 Lincoln Ave., Connersville.	Mullen, C. J., Lt. Col.,		1828 Washington Blvd., Kansas City.
Grove, Robert H., Major,		Seireleville.	Rhoades, Gordon H., Capt.,		Hertzler Clinic, Hialestead.
Hart, Lempha, P., Lt. Col.,		905 S.E. 2nd St., Evansville.	Riedel, Robert H., Major,		Osage City.
Harvey, B. J., Major,		510-15 Lafayette Life Bldg., Lafayette.	Shanklin, John H., Major,		1050 Sandusky, Kansas City.
Hillery, John L., Lt. Col.,		Silver Lake.	Thorpe, George L., Major,		Valley Center.
Laubscher, Clarence A., Capt.,		R.R. 2, Evansville.	Underwood, Charles C., Capt.,		515 Exchange, Emporia.
Lybrook, William B., Major,		RFD 2, Galveston.	Woodard, Lawrence E., Capt.,		407 E. 6th St., Kinsley.
McArdle, Edward G., Capt.,		1215 Sheridan Ct., Fort Wayne.	Wulff, Edwin T., Major,		905 Laramie St., Atchison.
McCoy, George A., Capt.,		53 N. Bolton Ave., Indianapolis.	Kentucky		
Malcolm, Russell L., Lt. Col.,		29 S. 21st, Richmond.	Dye, Fred C., Major,		1749 Deerwood Ave., Louisville.
Martin, Loren H., Capt.,		5069 W. 15th St., Indianapolis.	Evans, Orville T., Capt.,		Mt. Sterling.
Mason, Everett E., Lt. Col.,		2318 Mulberry Ave., Evansville.	Miller, James W., Lt. Col.,		Greensburg.
Matthew, John R., Capt.,		2 Pearl St., Knox.	Palmer, Lee, Col.,		575 Barberry Lane, Louisville.
Mercedith, Elwood J., Major,		209 S. 20th St., Richmond.	Pennington, William H., Lt. Col.,		215 Chenault Rd., Lexington.
Openshaw, James F., Capt.,		Goodland.	Rankin, Fred Wharton, B.G.,		Cave Hill Farm, Harrodsburg.
Paris, Durward W., Capt.,		RFD 6, Kokomo.	Pike, Lexington.		
Ramsey, Hugh S., Capt.,		612 E. Univ. St., Bloomington.	Riggs, Robert C., Major,		200 E. Main St., Lexington.
Raney, Ben B., Capt.,		370 E. Vincennes St., Linton.	Louisiana		
Ropp, Harold E., Capt.,		New Harmony.	Bienvenu, Oscar J., Capt.,		Opelousas.
Savage, Arthur R., Capt.,		1602 Fairhill Rd., Fort Wayne.	Connell, John R., Major,		Forest Hill.
Simmons, Frederick H., Capt.,		St. Vincents Hosp., Indianapolis.	Crow, Richard D., Capt.,		803 Jordan, Shreveport.
Smallwood, Robert B., Capt.,		Bedford.	Dach, Richard J., Capt.,		Charity Hospital, New Orleans.
Smith, Lowell C., Major,		419 Meridian St., W. Lafayette.	Dalton, Orien E., 1st Lt.,		Jeanerette Rd., New Iberia.
Stewart, James H., Major,		873 S. Boots St., Marion.	Davis, David W., Capt.,		1474 Letitia St., Baton Rouge.
Stout, Richard B., Major,		412 2nd St., Elkhart.	Davis, Frank H., Capt.,		403 Myrtle Blvd., Lafayette.
Stubbins, William M., Capt.,		RR 1, % C. W. Neu., Elkhart.	Foster, Furman L., Lt. Col.,		Rural Route, Ilico.
Trockman, Richard J., Major,		615 Englewood Ave., Evansville.	Goss, Vernon V., 1st Lt.,		R. F. D., Church Point.
Weddle, Charles O., Capt.,		1210 N. East St., Lebanon.	Hart, William W., Capt.,		Fletcher Clinic, Ringgold.
Whitlock, Francis C., Capt.,		1924 N. Talbot, Indianapolis.	Hunt, Robert E., Major,		2403 Albert St., Alexandria.
Wilson, Fred M., 1st Lt.,		107 East Blvd., Kokomo.	Lamansky, Isadore M., Capt.,		Weber Bldg., Lake Charles.
Wolfram, Don J., Lt. Col.,		418 E. 15th St., Indianapolis.	Marino, Joseph B., Capt.,		3510 Bank St., New Orleans.
Zwickel, Ralph E., Capt.,		P. O. Box 386, Newburgh.	Morrison, B. O., Capt.,		Civil Courts Bldg., New Orleans.
Iowa			Parrott, John H., Major,		Riverside Sanatorium, Monroe.
Allen, James H., Major,		715 River St., Iowa City.	Roane, Henry S. Jr., Lt. Col.,		Route 4, Ruston.
Allen, Roy J., Major,		Sumner.	Romeo, Zachary J., Major,		2703 Robert St., New Orleans.
Anspach, Royal S., Lt. Col.,		Mitchellville.	Russo, Salvatore J., Capt.,		702 W. College, Lafayette.
Boden, Worthey C., Capt.,		2669 Ripley St., Davenport.	Selser, Richard E., Lt. Col.,		Charity Hospital, New Orleans.
Buxton, Otho C., Capt.,		500 Buxton Dr., Webster City.	Stander, Leonard H., Major,		2307 Weller Ave., Istrouma.
Castell, John W., Capt.,		Fairfield.	Trifon, Harry M., Major,		3550 Greenway, Shreveport.
Cooper, Wayne K., Major,		17 So. 17th St., Ft. Dodge.	Yancey, C. T., Capt.,		Charity Hosp. of Louisiana, New Orleans.
Corcoran, Thomas E., Capt.,		Rock Rapids.	Young, Richard W., Major,		Baton Rouge.
Donnelly, Bernard A., Major,		801½ Triangle Pl., Iowa City.	Maryland		
Dorner, Ralph A., Major,		University Hosp., Iowa City.	Barrett, Morris K., Major,		4525 Maple Ave., Bethesda.
Doyle, Joseph L., Capt.,		Sigourney.	Bond, John P., Capt.,		Baltimore City Hosp. Baltimore.
Dressler, John B., Capt.,		709 Main, Ida Grove.	Brodsky, Alexander E., 1st Lt.,		2220 Park Ave., Baltimore.
Englerth, Frederick L., Capt.,		Univ. of Iowa Hosp., Iowa City.	Donovan, James M., Capt.,		Kernan Hosp., Baltimore.
Gittler, Ludwig, Lt. Col.,		Fairfield.	Franklin, Joseph P., Lt. Col.,		Box 690, Cumberland.
Glassman, Arthur L., Capt.,		421 S. Dodge St., Iowa City.	Goodman, Julius H., Capt.,		3400 E. Baltimore St., Baltimore.
Hanson, Lawrence C., Capt.,		Jefferson.	Higgins, Paul Jr., Capt.,		Johns Hopkins Hospital, Baltimore.
Hardin, Robert C., Lt. Col.,		318 E. Jefferson, Iowa City.	Hooker, Russell H., Capt.,		1016 St. George Rd., Baltimore.
Hulse, Charles A., Major,		3927 University Ave., Des Moines.	Hull, Harry C., Col.,		3799 Juniper Rd., Baltimore.
Kimball, John Egbert, Jr., Major,		Univ. Hospitals, Iowa City.	Jandorf, R. D., Capt.,		Riviera Apt. 3, Lake Dr., Baltimore.
Koehne, Frederick D., Major,		Oakland.	Karlan, A. Morton, Capt.,		Stewarts' Cottage, Berwyn.
Lannon, James W., Capt.,		311 Main, Clear Lake.	Kilby, Walter L., Lt. Col.,		4419 Marble Hall Rd., Baltimore.
Limburg, John I., Jr., Capt.,		303 W. Lincolnway, Jefferson.	Kolman, Lester N., Major,		3700 Park Heights Ave., Baltimore.
Maloney, Paul J., Capt.,		2342 York St., Des Moines.	Meyer, Eugene, III, Capt.,		1936 McElderry St., Baltimore.
Maresh, Gerald S., Major,		424 S. Summit St., Iowa City.	Norcross, John A., Major,		9211 Georgia Ave., Silver Spring.
Meffert, Clyde B., Lt. Col.,		117 3d St., Cedar Rapids.	Parr, William A., Major,		4201 Wilkens Ave., Baltimore.
Meyer, Milo G., Lt. Col.,		407 Masonic Bldg., Marshalltown.	Pullen, Myrick W., Jr., Capt.,		E. Joppa Rd., RFD 6, Towson.
Moriarty, John F., Capt.,		Rock Rapids.	Schaffer, A. J., Lt. Col.,		3502 Southvale Rd., Pikesville.
Osineup, Paul W., Capt.,		487 Orpheum Bldg., Sioux City.	Smith, John P., Capt.,		3005 Epstern Ave., Baltimore.
Parke, John, Major,		2319 C Ave. N.E., Cedar Rapids.	Sturgis, William J., Jr., Major,		Laurel.
Peterson, Vernon W., Col.,		Care A. G. Vaala, Lawler.	Thomas, Ramsey B., Lt. Col.,		Relay.
Rarick, Ivan H., Capt.,		3925 Floyd Ave., Sioux City.	Uhler, C., Major,		Mt. Roy. Apt., Mt. Roy. & St. Paul, Baltimore.
Ryan, Cyril J., Capt.,		1109 N. Oak St., Creston.	Wolf, Nathan, Major,		2419 N. Pulaski St., Baltimore.
Shaw, Robert E., 1st Lt.,		317 2nd Ave., N.W. Waverly.			
Smith, Rex I., Capt.,		501 Campbell Ave., Waterloo.			

PHYSICIANS SEPARATED FROM SERVICE

Name	Rank	Address	Name	Rank	Address
Massachusetts			Minnesota		
Allen, Roger E., 1st Lt., 653 Main St., Shrewsbury.			Ahern, Gerald S., 1st Lt., Mayo Clinic, Rochester.		
Cincotti, John J., Major, 442 Pleasant St., Belmont.			Anderson, Wallace E., Major, Thief River Falls.		
Dalton, Kenneth V., Capt., 133 Washington St., Weymouth.			Beare, John B., Capt., 512 4th St. S.W., Rochester.		
Doyle, Joseph T., 1st Lt., Boston City Hosp., Boston.			Beck, Norman R., Capt., Mayo Clinic, Rochester.		
Greene, Jeremiah E., Lt. Col., 47 Paul St., Newton Center.			Brandes, Robert W., Major, Jordan.		
Hedblom, Carl A., Jr., Capt., 983 Memorial Dr., Cambridge.			Buirge, Raymond E., Capt., 3316 E. 24th St., Minneapolis.		
Heels, George E., Major, 2 Longfellow Road, Cambridge.			Challman, Samuel A., Col., 1800 Dupont St., Minneapolis.		
Hester, James W., Capt., 120 Winter St., Clinton.			Dupont, Joseph A., Capt., Excelsior.		
Hurley, Daniel J., Lt. Col., 85 Langley Rd., Newton.			Ellis, Fred A., Major, 4449 Zenith Ave. S., Minneapolis.		
Hurwitz, A., Major, 27 Allenwood St., West Roxbury.			Erickson, Clifford O., Major, Pouch A., Rochester.		
Joslin, Allen P., Major, 81 Bay State Rd., Boston.			Fowler, Lucius H., Col., 26 Park Lane, Minneapolis.		
Leavitt, Benjamin, Major, 857 North Main, Fall River.			Frogner, Lester S., Major, Grand Marais.		
Levine, David I., Capt., 17 Front St., Weymouth.			Leitschuh, Linus F., Capt., Sleepy Eye.		
Oberson, Henry J., Lt. Col., 93 Eastern Ave., Lynn.			Minckler, John E., Capt., 111 LaSalle Ave., Virginia.		
Reid, Howard S., Lt. Col., 32 Summer St., Cohasset.			Simons, Stanley J., Major, Akeley.		
Rubino, Bernard C., Capt., 4 Maple St., Baldwinville.			Sperling, Louis, Major, 2917 Sunset Blvd., Minneapolis.		
Schuler, James D., Capt., New England Sanitarium & Hosp., Stoneham.			Stratte, Alf K., Major, Pine City.		
Stalk, Theodore, Major, 62 Curtis St., Egypt.			Swanson, Vincent F., Capt., 619 4th St. S.W., Rochester.		
Michigan			Mississippi		
Adelson, Sidney L., Major, 3752 Tuxedo Ave., Detroit.			Jones, Warren C., Capt., Sunflower.		
Alexander, Martin M., Major, Harper Hosp., Detroit.			Lobrano, Isaac E., Major, Centreville.		
Bagley, Harry E., Capt., 7541 Oakman Blv., Dearborn.			Moorhead, Robert J., Lt. Col., 118 Grand Ave., Yazoo City.		
Boothby, Carl F., Major, Lawrence.			Westerfield, James A., Capt., Merigold.		
Bronson, William W., 1st Lt., 306 Mill St. Penckney.			Missouri		
Carron, Harold, Major, 3807 Cortland, Detroit.			Agress, Harry, Lt. Col., 5539 Waterman Ave., St. Louis.		
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Conrad, Cecil D., Capt., 9 N. Summitt St., Ypsilanti.			Beal, Raymond J., Capt., 440 Madison St., Kansas City.		
Crabtree, Peter, Major, 208 N. Division, Ann Arbor.			Bernet, Henry S., Major, 2731 Campbell St., Kansas City.		
Davis, Fenimore E., Major, 405 W. Hoover St., Ann Arbor.			Brasher, Ben H., Capt., 1110 Main St., Lexington.		
DeWeese, Marion S., Major, 1313 E. Ann St., Ann Arbor.			Caldwell, John K., Capt., 435 E. 65th Terrace, Kansas City.		
DeYoung, Frederick W., Capt., Spring Lake.			Conrad, Joseph A., Major, 2411 Indiana, Kansas City.		
Durocher, Normand E., Capt., 17 E. Westfield, Ecorse.			Diveley, Rex L., Col., 1400 Professional Bldg., Kansas City.		
Edmonds, John M., Major, Horton.			Drey, Norman W., Lt. Col., 603 Metropolitan Bldg., St. Louis.		
Eschbach, Joseph W., Major, 22375 Garrison, Dearborn.			Fingert, Hyman H., Capt., 5310 Englewood Pl., Normandy.		
Fraser, Robert J., Capt., 156 E. Chicago St., Coldwater.			Friedman, Burt, Major, 4605 Lindell St., St. Louis.		
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Goldin, Morris I., Capt., 2711 Monterey St., Detroit.			Glasscock, J. R., Capt., 2608 S. Kingshighway Blvd., St. Louis.		
Gordon, Harold L., Major, 1523 E. Jefferson Ave., Detroit.			Greenbaum, Roy, Major, 7569 Oxford Dr., Clayton.		
Gray, Fred B., Capt., Butterworth Hospital, Grand Rapids.			Growdon, John A., Major, 622 West 67th St., Kansas City.		
Green, Louis M., Capt., 19949 Kerchal Ave., Detroit.			Hanss, Armand W., Major, 1431 N. Jefferson St., Springfield.		
Greer, Richard H., Major, Northport.			Harms, Albert C., Capt., Oregon.		
Groscost, Arthur G., Capt., 1360 Delaware, Detroit.			Hashinger, Edward H., Col., 3927 Warwick Blvd., Kansas City.		
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Hanelin, Joseph, Capt., 2443 Grand Ave., Detroit.			Kadlubowski, Edmund J., Major, 223 Tacoma Drive, LeMay.		
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Johnson, Kenneth H., 1st Lt., 1539 Spencer St., Lansing.			Morgan, David B., 1st Lt., 900 E. Armour, Kansas City.		
Kane, Thomas J., Capt., 1323 4th St., Muskegon.			Mullinax, Orr, Major, State Hospital 2, St. Joseph.		
Kelly, Wendell C., Major, 1217 W. Hillsdale, Lansing.			Noble, William C., Capt., 914 E. 28th St., Kansas City.		
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Lefevre, G. L., Lt. Col., 605 Hackley Union Nat. Bk., Muskegon.			Scherman, Victor E., Major, 245 North Union Ave., St. Louis.		
Lemire, William A., Capt., 318 Lakeshore Drive, Escanaba.			Scorse, Sidney W., Major, 107 S. Ball St., Webb City.		
Lorber, Joseph, Capt., 10508 West Chicago St., Detroit.			Senturia, Ben H., Capt., 5548 Waterman Ave., St. Louis.		
Lurie, Robert I., Major, 3113 S. Washington St., Saginaw.			Sienknecht, Elmer C. Jr., Major, K. C. Gen Hosp. Kansas City.		
McArthur, Reuben H., Capt., Clio.			Stone, William E., Col., 301 Chestnut St., Boonville.		
McRae, James H., Capt., 2095 West Grand Blvd., Detroit.			Summers, Jacob H., Capt., 300 N. Washington, Lebanon.		
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Mulligan, Philip T., Major, 112 Scott, Mt. Clemens.			Thibault, Frank G., Capt., Hickory & Wood St., Neosho.		
Peelen, Matthew, Lt. Col., 1331 Grand Ave., Kalamazoo.			Vatterott, Paul B., Capt., 8103 Allen Ave., St. Louis.		
Phillips, Homer A., Capt., 420 Bldg. & Loan Bldg., Saginaw.			Womble, James G., Capt., 6647 Berthold Ave., St. Louis.		
Reisman, Samuel G., Capt., 563 Belmont, Detroit.			Wright, Robert P., Major, St. Josephs Hosp., Kansas City.		
Reske, Alven A., Major, 22010 Michigan, Dearborn.			Montana		
Robinson, Howard, Capt., 4409 Sophia St., Wayne.			Koessler, Horace Horton, Capt., 330 Connell St., Missoula.		
Royer, Clark W., Capt., 99 Iroquois Ave., Battle Creek.			McCabe, James J., Capt., 615 Stuart St., Helena.		
Rupprecht, Emil F., Capt., 7614 Oakman St., Dearborn.			Mears, Claud M., Capt., Power Blook, Helena.		
Schlesinger, Henry, Capt., 1976 Atkinson, Detroit.			Monerrate, Domingo N., Lt. Col., 222 Power Bldg., Helena.		
Sharp, Mahlon S., Major, Woman's Hospital, Detroit.			Nebraska		
Smyka, Edward J., Capt., 13403 Syracuse St., Detroit.			Brauer, Siegfried H., Major, R.R. 2, Norfolk.		
Steffensen, W. H., Major, 709 Gladstone S.E., Grand Rapids.			Bunting, Louis G., Capt., Univ. Hosp. Omaha.		
Stewart, Marshall B., Major, 58 Sheldon St., Houghton.			Comine, Joseph J., Capt., 1719 S. 16th St., Omaha.		
Tuttle, William M., Major, 14500 Warwick Rd., Detroit.			Cram, Roy S., Capt., Burwell.		
Verhage, Martin D., Capt., 103 Thompson St., Kalamazoo.			Green, Charles J., Major, 2519 No. 60th Ave., Omaha.		
Wagley, Perry V., Major, Pontiac State Hosp., Pontiac.					
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Name	Rank	Address	Name	Rank	Address
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Lempka, Arnold W., Capt., Tecumseh.			Bick, Edgar M., Lt. Col., 320 Central Park West, New York.		
Nielsen, J. Christian, Major, Hastings State Hosp., Ingleside.			Bloom, Joseph, Capt., 2307 Quentin Rd., Brooklyn.		
Merrick, Alton J., Capt., 2135 N. Park, Fremont.			Bracco, Donato J., Capt., 341 E. 116th St., New York City.		
Myers, Henry D., Major, Schuyler.			Brundage, Frank E., Lt. Col., 572 W. Ferry St., Buffalo.		
Sandritter, Gilbert L., Lt. Col., Norfolk State Hosp., Norfolk.			Caravella, Joseph A., Capt., 71-Eight Ave., Brooklyn.		
Schaeckers, Richard H., Major, 1123 S. 32d St., Omaha.			Cellino, Joseph F., Capt., 31 N. Zebra St., Dunkirk.		
Shupe, Lester, Lt. Col., 117 East St., Fairbury.			Clark, Preston R., Capt., 107 Genesee St., New Hartford.		
Slaughter, Guy P., Capt., 1105 Park Ave., Norfolk.			Deisher, Joseph B., Jr., Capt., 170 Westminster Rd., Rochester.		
Soltz, Gustav D., Major, Office of the Air Officer, Omaha.			Del Vecchio, James A., Major, 1407-77th St., Brooklyn.		
Tamisica, John A., Col., 1313 S. 79th St., Omaha.			Drexler, Milton, Capt., 791 Prospect Ave., Bronx.		
Townley, Robert H., Major, Kenesau.			Edgerly, W. S., Major, 46 Westminster Court, New Rochelle.		
Watson, Donald P., Capt., 1723 W. 1st St., Grand Island.			Eisenberg, David S., Major, Pt. Byron.		
Weinberg, Joseph A., Major, 619 S. 37th St., Omaha.			Fenstermacher, Walter A., Lt. Col., 159 Willow Bend Rd., Rochester.		
New Hampshire			Frischia, Pascal, Capt., 1578 W. 7th St., Brooklyn.		
Dunbar, Clarence E., Lt. Col., 913 Elm St., Manchester.			Ginsberg, Solomon, Capt., 3336 Rochambeau Ave., Bronx.		
New Jersey			Gold, Jacob L., Major, 302 W. 87th St., New York City.		
Ajamian, Harry M., Capt., 2001 New York Ave., Union City.			Goldfarb, Alvin I., Capt., 160-16 33rd Ave., Flushing, L. I.		
Albini, Mario J., Capt., 204 5th St., Hoboken.			Goodnough, Charles F., Capt., 322 Ten Eyck St., Watertown.		
Bennett, Robert E., Capt., N. J. State Hospital, Trenton.			Hall, Charles H., Capt., 160 86th St., Brooklyn.		
Berk, Morris D., Lt. Col., 33 Bartholf Ave., Pompton Lakes.			Hutner, Sydney, Major, 125 Ocean Parkway, Brooklyn.		
Bornstein, Paul K., Lt. Col., 415 S. Lake Dr., Belmar.			Ingrassia, Paul S., Capt., Nanuet.		
Bunting, John J., Capt., 56 Maple Pl., Clifton.			Jenks, Robert S., Capt., 73 Main, Batavia.		
Burpeau, William P., Lt. Col., 80 Woodland Ave., East Orange.			Kaplan, George, Lt. Col., 47-60 43rd St., Woodside, L. I.		
Cerone, Daniel M., Capt., 30 Ridgewood Ave., Glenridge.			Katzman, Harold, Capt., 3 Hopper St., Utica.		
Chinard, Francis P., Major, 93 Mercer St., Princeton.			Kenler, Myron L., Capt., 60-30 79th St., Elmhurst.		
Cronin, Francis J., Capt., 730 South St., Elizabeth.			Keys, Nathaniel T., Capt., 210 N. Church St., Goshen.		
Curtis, Donald A., Lt. Col., 241 Union St., Hackensack.			Kissin, Ben, Capt., 1716 Ave. I, Brooklyn.		
Dantzig, Henry, Capt., 31 Eldridge Ave., Trenton.			Kittenplan, Harold N., Capt., 4015 Dickinson Ave., Bronx.		
Demarest, Gerald B., Capt., 402 Harrison Ave., Westfield.			Klaristenfeld, Samuel "M.", Capt., 155 W. 20th St., N. Y. C.		
Dmytriw, Stephen, Capt., 152 South Orange Ave., Newark.			Klein, David, Capt., 9159-191 St., Hollis, L. I.		
English, H. F., III, Major, 10 Morningside Drive, Trenton.			Klicka, Karl S., Capt., Grasslands Hosp., Valhalla.		
Evans, James L., Jr., Major, 254 Christie Heights St., Leonia.			Korostoff, Bernard B., Capt., 1302 Avenue N, Brooklyn.		
Forbes, John S., Capt., Cedar St., Basking Ridge.			Kossmann, Charles E., Lt. Col., 140 East 54th St., New York.		
Forte, Danile L., Capt., 545 Central Ave., Orange.			Kreinin, Sidney, Major, 5722 4th Ave., Brooklyn.		
Fortunato, Samuel J., Capt., 345 Walnut St., Newark.			Kriegler, Joseph, Major, 175 Ridge Rd., Lackawanna.		
Frankel, Henry, Major, 6022 Palisade Ave. West New York.			Kurtz, Irving M., Capt., 75 Martense St., Brooklyn.		
Franson, Andrew E., Major, 932 Brunswick Ave., Trenton.			LaBarbera, Joseph F., Major, 532 Ninth St., Brooklyn.		
Gillis, Alfred G., Major, 19 W. Maple St., Clayton.			Lamb, Richard R., Capt., 309 Main St., Farmingdale.		
Harris, W. O., Capt., 32 N. New Jersey Ave., Atlantic City.			Lambert, John T., Capt., 215 East 72d St., New York City.		
Hayes, Gerald W., Major, 86 Hawthorne Ave., East Orange.			Langford, W. C., Major, Babies Hosp., Rm. 418, N. Y. City.		
Holland, Moses H., 1st Lt., 2412 Palisade Ave., Weehawken.			Lander, Joseph, Major, 22 East 88th St., New York.		
Hulett, Albert G., Lt. Col., 20 Hawthorne Ave., E. Orange.			Lee, Arthur B., Capt., 1150 Pacific St., Brooklyn.		
Ianacone, John A., Capt., 310 5th Ave., Paterson.			Lee, Thomas E., Capt., 3240 Henry Hudson Pky., New York.		
Judge, John F., Capt., 33 Hazelwood Ave., Newark.			Leone, Angelo F., Capt., 200 Park Ave., Medina.		
Keats, Sidney, Major, 110 Mahew Dr., S. Orange.			Leslie, Morris J., Major, 2620 Glenwood Rd., Brooklyn.		
Kloby, John J., Capt., 555 So. Broad St., Elizabeth.			Le Strange, W. H., Lt. Col., 3453-88th St., Jackson Heights.		
Laurie, Andrew L., Capt., 894 Townley Ave., Union.			Leventhal, Louis, Capt., Kings County Hosp., Brooklyn.		
Lippman, Nathan L., Major, President Hotel, Atlantic City.			Lipsenthal, Harry L., Capt., 397 Linden Boulevard, Brooklyn.		
Londrigan, Joseph F., Capt., 1021 Park Ave., Hoboken.			Levine, Abraham I., Capt., 759 Linden Blvd., Brooklyn.		
Manette, Milton, Capt., 614-79th St., N. Bergen.			Lipsenthal, Harry L., Capt., 397 Linden Boulevard, Brooklyn.		
Masciocchi, Thomas A., Major, 316 Park Ave., Orange.			Livingston, Elias, Major, 1715 53d St., Brooklyn.		
Miller, Isadore I., Capt., 675 Sanford Ave., Newark.			Lowey, Henry, Capt., 114-69 202nd St., Albans, Queens County.		
Morris, Carlyle, Major, Spring St. & Lake Ave., Metuchen.			Lynch, Charles H., Capt., 1631 S. Salina St., Syracuse.		
Murphy, Francis J., Major, 144 Beach Ave., Larchmont.			Lyon, Edward C., Lt. Col., Reemsburg, L. I.		
Nataro, Joseph, Capt., 311 Self Place, South Orange.			Madonia, Dominic E., Capt., 299 E. 10th St., New York City.		
Orris, Harold J., Capt., 1463 Maple Ave., Hillside.			Maloney, Cornelius A., Capt., 8538-67th Rd., Forest Hills.		
Pois, John, Capt., 52 Pilot Pl., West Orange.			Maloney, Francis D., Capt., 45 Front St., Hempstead, L. I.		
Pollock, Samuel L., Capt., 313 Glenwood Ave., Bloomfield.			Maloney, William A., Capt., 420 81st St., Brooklyn.		
Pollock, Sol, Major, 102 W. 39th St., Bayonne.			Melone, Charles P., Capt., Central Ave., Bethpage.		
Richardson, Willoughby P., Lt. Col., 4 Park Ave., New York City or Lyons, N. J.			Mamalis, Fred E., Capt., 138 Prospect Park West, Brooklyn.		
Riegert, Louis C., Jr., 1st Lt., 317 Haddon Ave., Collingswood.			Marcus, Leon, Capt., 4819 14th Ave., Brooklyn.		
Scarlati, Salvatore P., Jr., Capt., 14 Union St., Lodi.			Marcus, Milton, Major, 18 Ludlam Pl., Brooklyn.		
Schwartz, Samuel H., Major, 1044 Park Ave., Plainfield.			Marcy, George H., Major, 28 W. Utica St., Buffalo.		
Silver, George A., III, Major, Stockton St., Hightstown.			Marino, Benjamin W., Capt., 1737 West 4th St., Brooklyn.		
Silver, Harry B., Major, 19 Lyons Ave., Newark.			Meyers, Frank, Lt. Col., 43 Argyle Park, Buffalo.		
Snegireff, Leonard S., Major, 932 Parkside Ave., Trenton.			Miller, Floyd D., Major, 1 Holmcrest Court, Oceanside.		
Stein, William, Major, 177 Livingston Ave., New Brunswick.			Missal, Morris E., Lt. Col., 28 Strathallan Park, Rochester.		
Sullivan, John A., Capt., 764 Queen Anne Rd., Teaneck.			Montesano, Pasquale, Capt., 411 Bleecker St., Utica.		
Tarta, Ciro S., 1st Lt., 246 East 18th St., Paterson.			Mouradian, James H., Capt., 366 Broadway, Amityville.		
Warner, Halsey F., Capt., 444 Central Ave., E. Orange.			Mudge, Gilbert H., Capt., Locust Ave., Northport.		
Wayman, Bernard R., Major, 834 Stuyvesant Ave., Trenton.			Nathan, D. E., Capt., City Hosp., Welfare Island, New York.		
Welkind, Allen A., Capt., 299 Clinton Ave., Newark.			Nedell, Ralph S., Capt., 1229 55th St., Brooklyn.		
Wilson, Lester R., Col., 3320 Federal St., Camden.			Neibrief, Milton N., Capt., Kings County Hospital, Brooklyn.		
Wylly, Martin D., Major, Haworth St., Haworth.			Nelson, Holger C., Major, 246 Flower Ave. W., Watertown.		
			Neustadter, Arnold, Capt., 45-05 164th St., Flushing, L. I.		
			Norris, Alexander L., Capt., 12 Second Place, Brooklyn.		

PHYSICIANS SEPARATED FROM SERVICE

Name	Rank	Address	Name	Rank	Address
New York—Continued			New Mexico		
Nuckols, Claude C., Jr., Capt., 543 Park Ave., Albany.			Farley, William W., Major, 640 S. 6th St., Raton.		
Page, Robert C., Major, 3 Park Lane St., Mt. Vernon.			Gillett, Hilton W., Capt., Lovington.		
Palmieri, Joseph F., Capt., 2253 84th St., Brooklyn.			Hamilton, Louis F., Major, Artesia.		
Parker, Russell C., Capt., 7 Lafayette Pl., Seacliff, L. I.			Whistler, Carl W., Capt., 609 W. Fruit Ave., Albuquerque.		
Parsons, Herbert, Major, 57 E. 93rd St., New York.			North Carolina		
Peterson, Clarence O., Capt., 140 Prospect Ave., Mt. Vernon.			Benbow, John T., Major., 2410 Elizabeth Ave., Winston Salem.		
Pincus, Joseph A., Major, 285 Schenectady Ave., Brooklyn.			Branning, William S., Capt., 2106 Woodrow St., Durham.		
Plass, John B., Capt., 6 E. 97th St., New York City.			Burwell, John C., Major, 421 Jefferson Bldg., Greensboro.		
Portnoy, Isidore, Capt., Kings Park St. Hosp., Kings Park.			Cleland, William A., Capt., P.O. Box 606, Durham.		
Prince, David J., Capt., 1301 Avenue K, Brooklyn.			Croom, Robert D., Jr., Major, Maxton.		
Princo, Frank J., Capt., 1509-76th St., Brooklyn.			Dougherty, John H., Major, Stonleigh Rt. 2, Asheville.		
Prussin, George, Lt. Col., 2160 76th St., Brooklyn.			Fenner, Edwin F., Col., Henderson.		
Rappaport, Irving, Capt., 84-46 63rd Ave., Rego Park, L. I.			Frazier, John W., Lt. Col., Salisbury.		
Rausch, Norbert G., 1st Lt., 1909 Kensington Ave., Buffalo.			Gay, Charles H., Sr., Capt., 143 Huntley Pl., Charlotte.		
Reinstein, Herman, Col., 491 E. 45th St., Brooklyn.			Lyon, Brockton R., Lt. Col., 102 Sunset Drive, Greensboro.		
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Riner, Edward D., Capt., 1982 Morris Ave., New York City.			Padgett, Philip G., Capt., Kings Mountain.		
Rock, Roger J., Capt., 2121 Westbury Court, Brooklyn.			Powell, Eppie C., Major, 207 W. Ash St., Goldsboro.		
Rodriguez, Carlos E., 1st Lt., 1 Mather St., Binghamton.			Rowe, George C., 1st Lt., 207 Hawthorne Lane, Charlotte.		
Rodstein, Manuel, Capt., 114 Albemarle Rd., Brooklyn.			Tice, Walter T., Major, 411 Hillcrest Dr., High Point.		
Rogan, Henry A., Lt. Col., 420 Manville Rd., Pleasantville.			Thomas, William C., Major, Siler City.		
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Rosenberg, Harold W., Capt., 1098 Sherman Ave., New York.			Young, Joseph A., Major, 6th St., Newton.		
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Ruggeri, Augustus A., Capt., 2515 Wallace Ave., N. Y. C.			Guillingsrud, Miles J. O., Major, 59 4th Ave., So. Grand Forks.		
Rumore, Emanuel V., Capt., 648 E. 51st St., Brooklyn.			Stone, Oral H., Capt., Bottineau.		
Saberski, Eugene, Major, 19 S. Broadway, N. Tarrytown.			Ohio		
Saffer, Sidney H., Capt., 960 Sterling Pl., Brooklyn.			Arthur, Robert D., Major, 1030 N. Fountain Ave., Springfield.		
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Sayer, John W., Capt., 19 William St., Gouverneur.			Johnston, Albert M., Lt. Col., Marysville.		
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Scher, David, Capt., 8905 146th St., Jamaica			Palmer, George A., Major, 129 Bennington Rd., Akron.		
Schiama, James L., Capt., 7715 Ft. Hamilton Pky., Brooklyn.			Powell, James G., Major, 15 Mentor Ave., Painesville.		
Schlein, William, Major, 48 1st Pl., Brooklyn.			Reese, Walter A., Lt. Col., 2600 El Paso, Middletown.		
Schlesinger, Sidney, 1st Lt., 166 5th Ave., New York.			Reiling, Walter A., Major, 569 Kenwood Ave., Dayton.		
Schmidt, Walter J., Major, 7601 85th Dr., Woodhaven.			Roller, Jay P., Major, Luckey.		
Schmitt, Alfred J., Capt., 88-73 193d St., Hollis, L. I.			Roth, Carl W., Capt., 385 15th Ave., Columbus.		
Schneider, J. Jacob, Capt., 390 Parkside Ave., Brooklyn.			Rubin, Herman G., Major, 157 S. Main St., Akron.		
Schneller, Oscar, Capt., 35-38 63d St., Woodside, L. I.			Schaen, Irvin R., Capt., 7 Aberdeen Drive, Middletown.		
Schulz, Milton J., Capt., 34 Nevada St., Buffalo.			Schumaker, William H., Capt., 1216 Woodland Ave., Canton.		
Schwartz, Mac L., Major, 212 W. 22nd St., New York.			Selfman, Albert, 1st Lt., 149 N. Main St., Mansfield.		
Sconzo, Lawrence J., Capt., 437 Union St., Brooklyn.			Shamansky, Harry S., Major, 883 Mt. Vernon Ave., Columbus.		
Shannon, William F., Major, 14 Whitman Ave., Bellmore, L. I.			Smith, Herman C., Lt. Col., 9128 Wade Park Ave., Cleveland.		
Shapiro, Albert, Capt., 170 E. 95th St., New York.			Spangler, Frederick E., Major, Somerset.		
Silverstone, Sidney M., Major, 690 Derard Ave., New York.			Stolzar, Irwin H., Capt., 2044 Cornell Rd., Cleveland.		
Simon, Charles, Capt., 1956 W. 10th St., Brooklyn.			Tuckerman, Jacob B., Capt., 1138 E. 145th St., Cleveland.		
Slobodkin, Morris, Major, 1721 43d St., Brooklyn.			Von Haam, Emmerich, Major, 2026 Guilford Rd., Columbus.		
Spielman, Morton M., Capt., 142 E. 49th St., New York City.			Wigser, Abraham M., Capt., RR6, Box 47, Cincinnati.		
Stalker, Leonard K., Capt., 1295 Lake Ave., Rochester.			Wyker, Albertus C., Capt., 59 W. 3d Ave., Columbus.		
Stein, Felix, Capt., 385 Argyle Rd., Brooklyn.			Zeiger, Michael R., Major, 2807 Avondale Rd., Cleveland.		
Stelman, Henry H., Major, 42 Miller Ave., Buffalo.			Oklahoma		
Sternlieb, I., Capt., 1500 Grand Concourse, New York City.			Beaty, Charles S., Capt., Cherokee.		
Stewart, John D., Lt. Col., 180 Soldiers Pl., Buffalo.			Bednar, Gerald, Jr., Capt., 300 N. E. 15th, Oklahoma City.		
Stoop, Harry, Capt., 94-25 Springfield Blvd., Queens Village.			Darnell, Elmer E., Major, Colony.		
Strauss, Samuel D., Capt., 289 Hudson Ave., Albany.			Davidson, Wallace N., Col., 725 E. Maple St., Cushing.		
Survis, Norman, Major, 650 Main St., New Rochelle.			Doyle, William H., Capt., Fite Clinic, 3rd & Wall, Muskogee.		
Swick, Moses, Major, 525 E. 89th St., New York.			Howard, Walter A., Major, P.O. Box 386, Chelsea.		
Teitel, Louis, Capt., 135 Rivington St., New York.			Klotz, William F., Lt. Col., 24½ E. Choctaw, McAlester.		
Thaler, Joseph I., Capt., 1551 Monroe Ave., Rochester.			Loy, William A., Capt., 215 Alameda St., Norman.		
Thompson, James E., Lt. Col., 107 E. 67th St., New York City.			Munding, Linus A., Capt., 3703 South Victor, Tulsa.		
Tow, Abraham, Major, 1085 Park Ave., New York.			Shields, Herbert B., Major, 1702 W. Cherokee, Enid.		
Trapp, Fritz C., 1st Lt., Gowanda State Hospital, Helmutli.			Taylor, Jim M., Capt., 1009 Med. Arts Bldg., Oklahoma City.		
Tripi, Louis A., Capt., 55 Shoshone, Buffalo.			Vahlberg, E. R., Major, 1223 Perrine Bldg., Oklahoma City.		
Underwood, Edward B., Lt. Col., 200 17th St., Brooklyn.			Wahl, Richard E., Capt., 1432 N.W. 33rd St., Oklahoma City.		
Vinci, Anthony J., Capt., 141 Mohawk St., Cohoes.			Wolff, John P., Major, 2816 N.W. 21, Oklahoma City.		
Wachtell, Sidney, Major, 1205 Avenue R, Brooklyn.			Worrall, Cyrus L., Capt., St. Anthony Hosp., Oklahoma City.		
Walsh, James M., Lt. Col., 131 Montcalm St., Ticonderoga.			Zampetti, Herman A., Major, Lawton.		
Weigel, Paul J., Capt., 717 Humboldt Pkwy., Buffalo.			Oregon		
Weill, David R., Jr., Major, Welfare Hosp., Welfare Isle.			Diack, Samuel L., Lt. Col., 4220 S.W. Greenleaf Rd., Portland.		
Weinstein, Leo S., Capt., 113 3rd St., Troy.			Gantenbein, C. E., Major, 2824 N.W. Santanita Terrace, Portland.		
Weintraub, Sydney, Col., Kings Highway, Tappan.					
West, James R., Capt., 1170 Genesee St., Rochester.			Huntington, William H., Col., 651 North Monroe, Portland.		
West, John Pettit Jr., Lt. Col., 210 E. 73d St., New York.			Sleeter, Robert W., Capt., 1715 E. Main St., Medford.		
Weymuller, Ernest A., Major, 430 E. 86th St., New York.					
Weynert, Joseph B., Capt., 958 45th St., Brooklyn.					
Woodworth, John A., Major, 513½ S. Crouse Ave., Syracuse.					
Zeff, Charles, Capt., 1414 W. 5th St., Brooklyn.					

PHYSICIANS SEPARATED FROM SERVICE

J. A. M. A.
Nov. 3, 1945

Name	Rank	Address
Pennsylvania		
Abramson, M., Capt.		5601 Woodbine Ave., Philadelphia.
Amsterdam, Julius, Capt.		1146 W. Venango St., Philadelphia.
Anderson, Joseph B., Major		2915 Belrose Ave., Pittsburgh.
Barrett, John B., Major		126 Fairfield Ave., New Castle.
Benjamin, K. W., Capt.		1838 W. Venango St., Philadelphia.
Bohen, Wm. R. A., Major		318 S. Franklin St., Wilkes-Barre.
Bondi, Frank R., Capt.		Greenock.
Breakstone, Edgar O., 1st Lt.		5629 Darlington Rd., Pittsburgh.
Bresler, Rubin R., Lt. Col.		Nine East Fourth St., Emporium.
Campbell, John H., Capt.		141 S. Wyoming St., Hazleton.
Caplan, Paul S., Capt.		5898 Hobart St., Pittsburgh.
Check, Frank E., 1st Lt.		652 N. Main St., Wilkes-Barre.
Dickey, Robert F., Capt.		131 E. Church St., Lock Haven.
DeLuca, Charles Q., Lt. Col.		1641 S. Broad St., Philadelphia.
Dilcher, Robert H., Capt.		312 S. 17th St., Allentown.
Dougherty, Francis M., Capt.		320 W. White St., Summit Hill.
Ewing, Agnew R., Major		West Grove.
Feather, Harry E., Col.		1428 Greystone Dr., Pittsburgh.
Forster, Hans W. Jr., Major		6820 Mower St., Philadelphia.
Gardner, Weston D., Capt.		St. Francis Hosp., Pittsburgh.
Gordon, Burgess L., Lt. Col.		1832 Spruce St., Philadelphia.
Gordon, Jacob M., 1st Lt.		4623 N. Broad St., Philadelphia.
Gordy, Samuel T., Major		4312 Spruce St., Philadelphia.
Grant, John R., Capt.		324 Bailey Ave., Pittsburgh.
Grazier, H. F., Capt.		St. Christopher's Hosp., Philadelphia.
Hall, James B., Major		360 Stony Creek St., Johnstown.
Harris, Harold B., Major		Allegheny & Howard St., Bellefonte.
Hanlon, Frank R., Lt. Col.		188 S. Franklin St., Wilkes-Barre.
Hendricks, C. S., Col.		404 E. Wopsey, Wehwood, Altoona.
Hohman, George C., Capt.		505 Garfield Square, Pottsville.
Hoyt, Dorsey R., Capt.		Worthington.
Humphrey, Harold I., Major		Slippery Rock.
Ingoldsbey, Eugene C., Major		502 4th Ave., Juniata, Altoona.
Jones, Robert T., Capt.		Harford.
Katz, Jacob, Capt.		1807 S. Sixth St., Philadelphia.
Kaufman, A. S., Lt. Col.		6715 Wyncote Ave., Philadelphia.
Keller, David H., Lt. Col.		55 Broad St., Stroudsburg.
Kimmich, John M., Capt.		505 Lancaster Pike, Haverford.
Kimney, Harold J., Major		145 E. Main St., Ligonier.
Kissell, DeWitt C., Capt.		7004 Lemington Ave., Pittsburgh.
Kolbe, Joseph T., Major		115 W. Miller St., New Castle.
Leinbach, Irwin S., Major		525 Weiser, Reading.
Lucchesi, Pascal F., Lt. Col.		4000 N. Front St., Philadelphia.
McCarthy, William C., Major		8 Sterrett St., Crafton.
Masland, Richard L., Capt.		222 S. 39th St., Philadelphia.
Milburn, Robert E., Capt.		Dixmont Hosp., Dixmont.
Miles, George H., Capt.		406 Jackson St., Gallitzin.
Montgomery, C. C., Capt.		924 S. Franklin St., Wilkes-Barre.
Moyer, Stanley M., Capt.		519 Juniper St., Quakertown.
Neff, Martin H., Capt.		441 E. Lancaster Ave., Downingtown.
O'Keefe, John J., Major		Levering Mill & Ott Rd., Cynwyd.
Osterhout, Franklin F., Lt. Col.		7301 N. 21st St., Philadelphia.
Palmisano, Vincent S., Capt.		Methodist Hosp., Philadelphia.
Patton, T. E., Major		154 Watkins Ave., Bellevue, Pittsburgh.
Perloff, William H., Capt.		506 Arbutus St., Philadelphia.
Pillsbury, Donald M., Col.		12 East Amherst Rd., Bala-Cynwyd.
Plumer, Joseph N., Capt.		State Branch, Cresson.
Ramsey, James P., Major		1528 Christian St., Philadelphia.
Ravdin, Isidor S., Brig. Gen.		3400 Spruce St., Philadelphia.
Remley, Luke K., Capt.		477 West Market St., York.
Rogel, Louis F., Major		R.D. 1, Masontown.
Romejko, Walter J., Capt.		687 Cricket Ave., Ardmore.
Rossmann, Bernard, Capt.		5603 Woodcrest Ave., Philadelphia.
Sahl, Henry G., Capt.		5700 Whithy Ave., Philadelphia.
Schein, G. C., Lt. Col.		331 Pennsylvania Blvd., Mt. Lebanon.
Schiff, Bence L., Major		5758 Pemberton St., Philadelphia.
Schreiner, G. R., Major		30 W. Broad St., West Hazleton.
Schultz, Samuel K., Lt. Col.		247 East 3rd St., Lewistown.
Shaffer, Robert L., Major		272 Main St., Brookville.
Siegel, Bernard, Capt.		1329 W. Clearfield St., Philadelphia.
Siegel, John M., Capt.		305 N. Main St., Butler.
Smith, Clyde F., Capt.		2218 St. James St., Philadelphia.
Smith, James F., 1st Lt.		405 E. Market St., Clearfield.
Smith, J. W., Capt.		1600 Darby Rd., Brookline, Upper Darby.
Sniscak, John M., Capt.		319 E. Lehigh St., Philadelphia.
Souls, Eggeiton C., Major		N. Main St., Ext. Washington.
Spritzler, Ramon J., Capt.		6151 N. 16th St., Philadelphia.
Steinberg, Martin R., Lt. Col.		1920 Pine St., Philadelphia.
Thorner, M. W., Major		1911 Wynnewood Rd., Philadelphia.
Walker, Arthur M., Major		Route 5, West Chester.

Name	Rank	Address
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Pennsylvania—Continued

Weest, Harry W., Lt. Col.		1907 8th Ave., Altoona.
Weigel, John E., Major		1431 Termon Ave., Pittsburgh.
Wennersten, Jack R., Capt.		15 S. Rohland St., Pottstown.
Weyand, James G. M., Lt. Col.		1280 Park Place, Beaver.
White, Joseph W., Lt. Col.		1534 N. Wash. Ave., Scranton.
Wible, Harvey G., Major		130 7th St., Monessen.
Zehfuss, Paul E., Lt. Col.		4403 Center Ave., Pittsburgh.

Rhode Island

Mahoney, William A., Lt. Col.		44 Montague St., Providence.
Rego, R. P. C., Capt.		103 Governor St., Providence.

South Carolina

Barnwell, E. H., Lt. Col.		Wadmalaw Island, Charleston Co.
Blank, Henry S., Major		613 Henderson St., Columbia.
Booker, John P., Major		607 E. Main, Walhalla.
Durst, George G., Col.		329 Hampton Ave., Greenwood.
Fair, Charles H., Lt. Col.		14 Manly St., Greenville.
Marcus, Hyman, Capt.		Eutawville.
Marshall, James M., Major		1405 9th Ave., Conway.
Mays, Lane E., Capt.		Greenville General Hosp., Greenville.
Parks, Richard H., Major		Cross Hill.
Pope, Madison R., Major		Roper Hospital, Charleston.
Smith, Charles Capers, 1st Lt.		30 Council, Charleston.
Smith, George C., Major		312 Cherokee Rd., Florence.
Smith, Hugh P., Lt. Col.		206 W. Earle Str., Greenville.
Stone, John T., 1st Lt.		Greenwood.
Teague, Martin M., Major		148 Morland Ave., Laurens.
Vunk, Raymond H., Major		166 Queen St., Charleston.
Webb, John K., Major		Great Falls.
Whitworth, Clyde W., Major		779 Glendalyn St., Spartanburg.
Zalin, Jacob, Capt.		Walterboro.

South Dakota

Sixbury, Carl E., Lt. Col.		Hot Springs.
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Tennessee

Bolling, Harlis O., Lt. Col.		Kingsport.
Burrus, Roger B., Capt.		3911 Gallatin Rd., Nashville.
Byrd, Benjamin F. Jr., Capt.		Granny White Rd., Nashville.
Carpenter, George K., Lt. Col.		Gateway Lane, Nashville.
Cobb, Malcolm F., Capt.		Concord.
Deere, Charles J., Major		John Gaston Hospital, Memphis.
Dozier, Robert L. Jr., Capt.		2405 Westwood Ave., Nashville.
Elliott, Philip C., Major		1108 Eastdale Ave., Nashville.
Estes, Harry M., Capt.		4020 Aberdeen Rd., Nashville.
Fowler, Shelton F., Capt.		627 Woodland St., Nashville.
Householder, Charles H., Major		Baptist Hosp., Memphis.
Hufstедler, Fred E., Major		Lenoir City.
Jones, Sam O., Major		2714 Gallatin Rd., Nashville.
Monroe, Harmon L., Capt.		124 Elm St., Erwin.
Phillips, Walter A., Lt. Col.		Arlington.
Runkle, William A., Lt. Col.		801 N. Trezevant, Memphis.
Schiffler, Harry K., Capt.		Vanderbilt Univ. Hosp., Nashville.
Swingle, Hugh F., Major		601 E. Unaka Ave., Johnson City.

Texas

Abney, Thomas B., Capt.		Box 128, Overton.
Allison, Joe M., Major		P.O. Box 117, Emory.
Austin, Dale J., Major		4605 Bowser Ave., Dallas.
Baden, Erwin E., Capt.		493 E. Hidalgo, Raymondville.
Balko, Andrew J., Lt. Col.		2616 San Diego St., El Paso.
Bass, James W., Col.		415 Parland Place, San Antonio.
Benavides, Simon I., Jr., Major		P.O. Box 68, Thornton.
Bevil, Lamar C., Lt. Col.		1435 Calder St., Beaumont.
Beyt, Frank J., Capt.		3812 Lakeshore Dr., Port Arthur.
Blum, Sigmund L., Major		812 Goodhue Building, Beaumont.
Brazda, Adolph W., Major		Ranger.
Bruhl, Charles K., Capt.		1706 North Blvd., Houston.
Butaud, Russell S., Capt.		801 Lathrop, Houston.
Caton, McKee, Lt. Col.		221½ S. Main St., McAllen.
Clark, Albert I., Major		1814 Avenue O, Galveston.
Concklin, Charles L., Capt.		434 Indiana St., Corpus Christi.
Cowles, A. G., Major		202 W. Kings Highway, San Antonio.
Culmer, John W., Lt. Col.		125 W. Courtland, San Antonio.
Cunningham, Ernest S. Jr., Capt.		924 S. Denton St., Gainesville.
De La Garza, William, Capt.		603 St. Charles St., Brownsville.
Devereux, J. M., Capt.		Box 1715 714 W. Kansas St., Midland.
Diddy, Charles B., Major		914 Norwood Bldg., Austin.
Dryden, Bud, Major		Sta. Hosp., Sheppard Field.

PHYSICIANS SEPARATED FROM SERVICE

Name	Rank	Address	Name	Rank	Address
Texas—Continued			Vermont		
Duncan, Frank B., Major, 2047 Highes St., Amarillo.			Conklin, Clifford T., Jr., Capt., 14 High St., Brandon.		
Dupre, John D., Lt. Col., Levelland.			Fogg, Allston H., Lt. Col., 41 Clark St., Burlington.		
Edens, Clarence, Capt., Box 1613, San Antonio.			Southworth, John D., Major, 197 Woodstock Ave., Rutland.		
Farrar, W. P., Major, 400 S.W. Reserve Life Bldg., Longview.			Walker, Lewell S., Jr., Major, 29 Pleasant St., Middlebury.		
Flamm, Kenneth R., Lt. Col., 801 La Salle St., Amarillo.			Virginia		
Gaddis, Herman W., Major, 3133 Lawnview, Corpus Christi.			Blackford, Staige D., Lt. Col., 1403 Hilltop Rd., Charlottesville.		
Goeth, Carl F., Major, 352 Blue Bonnet Blvd., San Antonio.			Brown, A. G. III, Capt., 1135 W. Franklin St., Richmond.		
Griffin, Olin A., Jr., 1st Lt., Randado.			Gianoulis, James T., Capt., Med. Coll. Hosp., Richmond.		
Hamilton, Carlos R., Capt., 5111 Caroline Blvd., Houston.			Hines, Herman H., Capt., State Farm.		
Harris, Gracelus C., Capt., Navosota.			Hurt, Ira H., Col., 418 Greenwood Rd., Roanoke.		
Harwood, George W., Major, 4223 Hamilton St., Dallas.			Jones, Joseph B., Major, 219 S. Macoy Ave., Culpeper.		
Hargis, William H., Lt. Col., 205 Camden St., San Antonio.			McKee, John B., Major, 309 S. Stewart St., Winchester.		
Heare, Louis C., Lt. Col., 3400 Sixth St., Port Arthur.			Nelms, Nowell D., Capt., Mathews.		
Hedges, Homer V., Capt., Hico.			Nelson, R. B., Jr., Lt. Col., 503 S. Washington St., Winchester.		
Henry, Colvern D., Lt. Col., 3407 W. Commerce, San Antonio.			Ruffin, Herbert G., Major, Chester.		
Hermann, Robert C., Major, 310 E. Gonzales St., Yoakum.			Somers, Lewis F., Major, 1114 Clay St., Lynchburg.		
Herndon, Gilbert C., Major, 3901 Ryan Ave., Ft. Worth.			Stratton, D. B., 1st. Lt., 827 Highland Ave., S. E., Roanoke.		
Hicks, Yale, Jr., Capt., 624 Patterson Ave., San Antonio.			Warthen, H. J., Jr., Lt. Col., 1503 Confederate Ave., Richmond.		
Hild, Jack R., Major, 2810 Caroline St., Houston.			Watts, Thomas D., Major, 816 W. Franklin St., Richmond.		
Jeter, James R., Capt., Ennis.			Washington		
Johnson, Homer Baker, Capt., Western Clinic Hosp., Midland.			Benjamin, Mac B., Major, U.S. Tacoma Hosp., Tacoma.		
Johnson, Jere B., Capt., 1204 Charles St., Pampa.			Cameron, Walter C., Major, 1103 Medical Arts Bldg., Tacoma.		
Jones, Edmund D., Lt. Col., 2449 Calder Ave., Beaumont.			Dodds, Gordon A., Capt., 3910 48th Place N.E., Seattle.		
Kaufmann, Maurice, Capt., 3517 Fairmount Ave., Dallas.			Friberg, Arnold E., Capt., East Sound, Orcas Island.		
Keating, P. M., Col., 1227 Nix Professional Bldg., San Antonio.			Fuller, Melvin F., Capt., 120 First Ave., Aberdeen.		
Kootsey, Joseph S., Capt., 901 West Alabama Ave., Houston.			Hindin, Herman, Capt., Ritzville.		
Latson, Harvey H., Col., Box 504, Abilene.			Hoag, Leslie G., Major, 1915 Rockwood St., Spokane.		
Leberman, Lowell H., Major, 1710 Monroe St., Commerce.			Levinson, Sol, 1st Lt., 200 21st Ave., Seattle.		
Lively, William M., Jr., Capt., 1247 S. Marsallis, Dallas.			Kingston, G. R., Major, Chelan County Health, Wenatchee.		
Lockhart, William E., II, Capt., Box 417, Alpine.			Lundmark, Vernon O., 1st Lt., 4137 21st Ave., S.W., Seattle.		
McFatrige, Keith W., Major, 1109 Harrison, Wichita Falls.			McCartney, Roy C., Capt., Anacortes.		
McKinney, Edgar P., Major, 138 Bailey Ave., Nacogdoches.			McDermott, John P., Capt., 825 Jefferson St., Chehalis.		
Marshall, Reagan M., Major, 1562 Scharpe St., Houston.			Morgan, Harry M., Major, 2115 W. Nichols Blvd., Longview.		
Matthews, John L., Lt. Col., 1605 Nix Prof. Bldg., San Antonio.			Read, Jesse W., Major, 800 N. C St., Tacoma.		
Merriman, George J., Jr., Capt., Baylor Hospital, Dallas.			Speer, Marvin E., Jr., Capt., 318 Cascade St., Leavenworth.		
Meyer, Walter B., Capt., Hondo.			Stimpson, Edward K., Major, 729 High St., Bellingham.		
Moet, John A., Capt., Box 81, Orange Grove.			Stroud, Carl W., Capt., 1323 Spring St., Seattle.		
Monsalvo, Rudolph O., Major, 216 Cornell Ave., San Antonio.			Tait, Arnold C., Capt., Rosalia.		
Moody, Foy H., Capt., 1611 5th St., Corpus Christi.			Wright, Edwin S., Major, 3035 63d SW., Seattle.		
Moore, Robert L., Capt., 4704 Shadywood Lane, Dallas.			West Virginia		
Osborne, Clarence F., Major, 406 S. Shaven St., Pasadena.			Ayers, Lloyd R., Major, Pinecrest Sanitarium, Beckley.		
Price, Sidney A., Major, 308 E. Church St., Victoria.			Booher, William T., Major, 85 Fifteenth St., Wellsburg.		
Ryan, Glen V., Capt., 1114 E. Polk, Harlingen			Bradford, William P., Lt. Col., 1201 5th St., Moundsville.		
Reitz, Percy A., Major, Pittsburgh.			Brick, John P., Capt., 724 Indiana Ave., Charleston.		
Rice, Albert J., Lt. Col., 1008 E. 12th St., Georgetown.			Condry, John C., Major, 2007 Kenawha Ave. S.E., Charleston.		
Robinson, Webber T., Capt., 130 W. 18th Ave., Houston.			Gates, Edmund O., Lt. Col., Grace Hospital, Welch.		
Rollins, Herbert B., Major, Lampasas.			Hall, Sobisca S., Lt. Col., 249 Carr Ave., Clarksburg.		
Routon, William M., Major, 1202 E. Houston, Kilgore.			Read, Jesse W., Capt., 800 N. C St., Tacoma.		
Russ, Stirling E., Major, 311 Howard St., San Antonio.			Roberts, Donald R., 1st. Lt., Box 966 Elkins.		
Sadler, Leslie R., Lt. Col., 3400 Chateau, Waco.			Wisconsin		
Schlechte, Marvin C., Lt. Col., 215 Camden St., San Antonio.			Dalrymple, Richard R., Major, 5 E. 14th St., Fond du Lac.		
Schneider, Martin, Capt., 1615 Avenue E., Galveston.			Dricken, Hilbert N., Major, 1123 N. 44th St., Milwaukee.		
Schnur, Sidney, Major, 1215 Walker, Houston			Flatley, Robert E., Capt., Antigo.		
Scobee, Richard G., Capt., 1022 Medical Arts Bldg., Houston.			Haukoil, Robert S., Major, 3935 N. Downer Ave., Milwaukee.		
Seale, Everett R., Lt. Col., 3408 Ella Lee Lane, Houston.			Hohf, Arnold H. J., Capt., 2324 Kendall Ave., Madison.		
Selke, Oscar O. Jr., Capt., 404 Woodland Ave., Houston.			Hollenbeck, S. W., Lt. Col., 2650 W. Fond du Lac Ave., Milwaukee.		
Sellers, Fred W., Major, 8406 Barkley Dr., Houston.			Jaastad, Leonard B., Lt. Col., 3178 N. 50th St., Milwaukee.		
Sharp, James C., Major, Corpus Christi.			Krehl, William H., Capt., 1130 Sherman Ave., Madison.		
Shotts, Chester C., Capt., Pleasanton.			Leasum, Charles, Capt., Sturgeon Bay.		
Sibley, D. Jacobi, Jr., Capt., Hotel Stockton, Ft. Stockton.			Matthai, Louis P., Capt., South Wayne.		
Sladczyk, George, Col., 601 5th St., Med. Bldg., Port Arthur.			Nebel, Harold, Lt. Col., 7723 N. Boyd Way, Fox Point.		
Smith, Nellins C., Capt., 117 E. Elm, Hillsboro.			Miller, Lee E., Major, 1228 S. 54th St., Milwaukee.		
Spezia, Joseph L., 1st Lt., St. Josephs Infirmary, Houston.			Moland, Oscar G., Major, Augusta.		
Stuart, Samuel E., Col., 507 N. Willomet, Dallas.			Rosenberg, S. W., Major, 525 E. Michigan St., Milwaukee.		
Talbot, George B., Major, Waskom.			Teplinsky, Louis L., Capt., 3003 N. 48th St., Milwaukee.		
Talkington, Pery C., Lt. Col., 5739 Richmond Ave., Dallas.			Twohig, David J., Lt. Col., 229 Melrose Blvd., Fond du Lac.		
Trumbull, Robert A., Col., 3832 Stratford, Dallas.			Vedner, Joseph H., Lt. Col., 308 11th St., Menomonie.		
Wagner, Ephraim L., Capt., 3507 La. St., Houston.			Wyoming		
Watkins, Elbert O., Capt., Box 303, Greggton.			Dominick, DeWitt, Major, 1040 Eleventh St., Cody.		
Westphal, Herbert M., Capt., 1000 Texas Ave., Weslaco.			Puerto Rico		
White, Bennie O., Major, 1706 W. 31, Austin.			Aybar, Jose A., Major, 20 Gertrudis St., Santurce.		
Wilkerson, Edward A., Lt. Col., 12 Chelsea Pl., Houston.					
Wolf, Edward T., Lt. Col., 411 Fannin St., Houston.					
Wolfe, Russell S., Lt. Col., Texas State Hotel, Houston.					
Woolf, Martin P., Capt., 3001 Swiss Ave., Dallas.					
Worden, Robert W., Capt., 702 8th Ave., Ft. Worth.					
Utah					
Larson, Rudolph V., Major, Smithfield.					
Sharp, Harlow B., Major, 1963 Michigan Ave., Salt Lake City.					

ORGANIZATION SECTION

REPORTS OF OFFICERS

NOTE.—At the 1925 session of the Association, the House of Delegates suggested that all reports of officers, committees, etc., and resolutions to be brought before the House, if available, be published in advance of the session so as to permit careful consideration and discussion.

(Continued from page 640)

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Board of Trustees is respectively submitted to the House of Delegates. In this report are covered the activities of various councils and bureaus of the Association during the year 1944 and, because of the lateness of the annual meeting of the House of Delegates, reference will be made to some matters that have received attention of the Board of Trustees during the current year.

Many new problems growing out of the prosecution of World War II have arisen within the last two years.

The working personnel of the Association has been greatly depleted and for many months the total number of employees was more than 200 below normal. An employment quota of 482 was imposed on the Association and for weeks at a time it was not possible to keep even this quota filled. The staffs of Councils and Bureaus were seriously reduced by the assignment of staff members to active duty with the military forces, while a large number of the clerical personnel accepted positions in government service or in industrial plants engaged in the production of war material. A considerable number of new employees served for relatively short periods. At the same time, the demands that were made on practically every department were far larger than in normal times. While the severe restrictions on paper supplies have made it difficult to maintain regular printing schedules and to produce printed material of various kinds that could have been utilized to advantage in various ways, it was also difficult to maintain employment in the printing department.

All employees who were assigned to military duty were assured that their positions would be kept open for them, but it has been practically impossible to secure replacements to serve during the war emergency who might be retained for service after the termination of the war.

Income and Expenditures

The official report of the Treasurer and the Association's auditors are appended as a part of this report of the Board of Trustees.

In 1944, as in the previous year, there was a distinct increase in income from all sources over expenditures. Net income in 1944 was \$933,091.34, exceeding the income of 1943 in the amount of \$214,217.58.

Total wages and salaries for the year 1944 amounted to \$1,255,400.84 as compared with \$1,202,472.14 in 1943. While it was necessary to increase both salaries and wages in 1944, the total expenditure for these purposes would have been much larger had it not been for a serious depletion in the number of employees.

The cost of supplies was considerably larger than in the previous year. Expenditures for various services were also larger than in 1943. Had wages and salaries and the cost of supplies and services been maintained at the normal employment level, the net gain in 1944 would have been radically reduced.

Income from investments in 1944 was \$98,494.04 as compared with \$82,744.08 in 1943. Even though the income from this

source exceeds similar income in 1943 by more than \$15,000, the Board of Trustees encountered great difficulty in finding satisfactory investments. Interest rates have been maintained at lower levels than in previous years, and it seems apparent that low interest rates will be maintained for a long time to come. However, the Board has attempted to keep idle funds invested to the fullest possible advantage, and it is gratifying to note that in spite of the nature of the existing situation with respect to investments and interest rates a larger interest return was realized in the past year.

Income from subscriptions to the Association's publications amounted to the sum of \$1,303,043.68, while in 1943 the subscription income was \$1,235,677.33. Advertising income in 1944 amounted to \$1,707,232.10, while in 1943 the sum realized from this source was \$1,366,659.10. The income from these two sources was unexpectedly large and there can be no assurance that such income can be maintained at the same level in succeeding years.

Expenses involved in the conduct of the work of the Councils, Bureaus and Committees in 1944 amounted to \$459,740.12 as compared to \$432,895.96 in the preceding year.

A new item appearing in the Auditor's Report is that pertaining to the cost of the employees' group annuity plan, initiated in 1944, amounting to \$122,354.47.

The cost of publication of the Association's periodicals was \$1,730,400.70 as compared to \$1,628,969.06 in 1943. There was a slight increase in the costs involved in the maintenance of the building, machinery, type and factory equipment, furniture and office equipment. The excess of costs in 1944 over 1943 resulted from increases in wages and salaries and increased cost of paper supplies, engraving, ink, building expense, insurance and taxes, editorials, news and reporting, first class postage, subscription and advertising commissions, group hospital and life insurance and the employees' annuity plan. Excess of income over 1943 is accounted for almost entirely by unusual increases in receipts from subscriptions and advertising and from income on investments.

Dr. Edward M. Pallette

Dr. Edward M. Pallette represented the California Medical Association in the House of Delegates of the American Medical Association at eight annual sessions. In June 1942 he was elected by the House of Delegates to serve as a member of the Board of Trustees of the Association. Throughout his professional career Dr. Pallette was earnestly and actively interested in the affairs of the county medical society and the state medical association of which he was long a member as well as in the welfare of medical institutions in his state and civic affairs in his own community. He was signally honored on many occasions by assignment by his fellows to the highest posts of service, in all of which he served with fidelity and distinguished efficiency.

Death came suddenly to Dr. Pallette in Chicago on Nov. 16, 1944, where he had come to attend an official meeting of the Board of Trustees.

By his willingness to play his full part in the performance of the duties assigned to the Board, his unfailingly courteous and friendly bearing, his tolerance for the opinions and convictions of others as well as his strict adherence to every principle which he believed to be right, Dr. Pallette won and held the respect and affection of all with whom he was associated during his service as an officer of the Association. He will be long remembered as a good and faithful servant of American medicine.

Appointment of Dr. Robert A. Peers

Dr. Robert A. Peers, a delegate of the California Medical Association, was appointed, in conformity with the provisions of the Constitution and By-Laws, to fill the vacancy on the Board of Trustees created by the death of Dr. Edward M. Pallette. The service of Dr. Peers under this appointment will continue until his successor is elected by the House of Delegates.

Cooperative Medical Advertising Bureau

The Cooperative Medical Advertising Bureau serves thirty-five journals published by constituent medical associations. The Advisory Committee to the Bureau is composed of seven members, four of whom were appointed on nominations submitted to the Board of Trustees by editors of the state medical journals. Those so appointed are Drs. John S. Bouslog, E. M. Shanklin, L. Fernald Foster and Stanley B. Weld. The other members of the Advisory Committee are Dr. Walter E. Vest, Mr. W. C. Braun and Dr. Olin West.

The financial records of the Bureau are kept by the Accounting Department and are subject to examination by the same auditors that audit the accounts of the American Medical Association. The following report of income and expense for 1944 has been so audited:

INCOME	
Commissions earned	\$76,452 02
Cash discounts on \$305,805 77 allowed to advertisers ..	14,611.53
	\$61,840 49
Commissions returned to state journals	46,000 00
	\$15,840 49
Expended in operation of Bureau, as itemized below	15,893 87
Balance due A M A to be deducted from 1945 earnings	\$53 38
EXPENSE	
Amount applicable to 1944 in accordance with statement of Dec 31, 1943	\$ 522 62
Salaries	9,030.30
Accounting departmental	2,160 00
Other departmental	50 10
Postage	392 23
Telegrams and telephone	355 81
Freight and Express	113 28
Departmental printing	385 36
Travel expense	2,157 49
Conference expense	125 00
Mercantile report service	95 81
Group annuity insurance	272 16
Office supplies	183 64
Miscellaneous and director's sundry expense	50 07
Total expense	\$15,893 87

Commissions earned by the Bureau and the amount returned to cooperating journals were larger in 1944 than in any previous year. Mr. Harold L. Sandberg is director of the Cooperative Medical Advertising Bureau and secretary of the Advisory Committee.

Liaison Office

Early in the war period the Surgeon General of the United States Army established a Liaison Office in the offices of the Association, which was maintained until shortly after VJ day. The first medical officer assigned to this duty was Col. Charles G. Hutter, M. C. U. S. Army, whose recent death was greatly deplored by all who knew him. When Colonel

Hutter was given a new assignment, he was succeeded as Liaison Officer by Lieut. Col. Harold C. Lueth, M. C., A. U. S., who served longest in that capacity. After Colonel Lueth was assigned to duty in the Office of the Surgeon General in Washington, Lieut. Col. Robert D. Bickel, M. C., A. U. S., became Liaison Officer and served until after Japan had surrendered and until the Liaison Office was discontinued. The Board of Trustees desires to record an expression of grateful appreciation to the three splendid medical officers assigned as Liaison Officers for their extremely helpful services and to the Surgeon General of the Army for their assignment and for the maintenance of the Liaison Office. The Board also expresses a very earnest hope that the Office of the Surgeon General realized some benefits from the operations of the Liaison Office, since it has been the desire of the Association to be as helpful as possible to all agencies of the government concerned with the prosecution of the war effort.

The Board of Trustees commends to the House of Delegates and to the Surgeon General the fine services of Col. Charles G. Hutter, Lieut. Col. Harold C. Lueth and Lieut. Col. Robert D. Bickel rendered in accord with the highest traditions of medicine and of the United States Army.

Joint Committee on Physical Fitness

The Joint Committee on Physical Fitness, a committee representing jointly the American Medical Association and the National Committee on Physical Fitness, was authorized by the House of Delegates in June 1944 following a recommendation to the House by the Board of Trustees for the creation of such a group. During the year since its establishment, the committee prepared public statements of policy concerning ways of effecting increased physical fitness. Contacts were made with the governors of the individual states urging the establishment of committees in each state and the development of programs for physical fitness. The Joint Committee on Physical Fitness cooperated with various national agencies interested in the same objectives. Much education of the public was accomplished through published addresses, editorials and the issuance of educational material to the press. The committee cooperated with various organizations which submitted programs for increasing physical fitness, particularly in the field of industry. A conference was held for the establishment of standards of physical fitness for persons of various ages, and work was in progress on the publication of manuals on physical fitness for men and women incorporating these standards.

The Congress of the United States, through failure to appropriate additional funds, brought to an end the work of the National Committee on Physical Fitness. That obviously served to discontinue as well the work of the Joint Committee. Those associated with the Joint Committee have had conferences with representatives of the Athletic Institute and other agencies leading to the ultimate formation of a foundation under voluntary auspices, to be known as the Keep Fit Foundation, which will carry on this work. At the time of their last meeting the secretaries and other officers of the state medical societies discussed the program on physical fitness and volunteered their cooperation. The Board of Trustees desires to recommend that organizations in the individual states cooperate with other agencies in furthering this work.

ADDENDA TO REPORT OF BOARD OF TRUSTEES

Report of the Committee on Scientific Research for 1944

During the year twenty-three applications were received and nineteen new grants were made, amounting in all as paid to \$8,480. Sixteen grants were closed. The work under twenty-five grants made before 1944 is in progress but in several cases delayed or suspended on account of the war. During the year unused balances were refunded in the amount of \$822.

The annual financial statement is presented; also lists of grants closed during the year, of pending grants from earlier years, and of grants made in 1944.

FINANCIAL STATEMENT FOR 1944

Balance, Jan. 1, 1944.	\$18,201.16
Appropriation for 1944.	11,700.00
Donation to Hunt Fund.	500.00
Refund, grant 573.	12.23
Refund, grant 611.	55.27
Refund, grant 625.	170.73
Refund, grant 649.	6.47
Refund, grant 651.	11.22
Refund, grant 656.	131.08
Refund, grant 669.	100.00
	<hr/>
	\$31,226.16

GRANTS AND EXPENSES PAID IN 1944

Grant 668, George Ulett	\$ 250.00
Grant 669, Hans Popper	400.00
Grant 670, Wilbur Thomas	300.00
Grant 671, A. M. Jasssek	1,000.00
Grant 672, Archie R. Tunturi	200.00
Grant 673, Leo Hardt	300.00
Grant 674, David J. Sandweiss and Thomas L. Patterson	750.00
Grant 675, Israel Davidsohn	500.00
Grant 676, Frederick M. Allen	500.00
Grant 677, J. LeRoy Connel (Hunt Fund)	500.00
Grant 678, Herbert S. Kupperman	500.00
Grant 679, Theodor I. Bratrud (\$600, held in abeyance)	
Grant 680, Wilhelm Rauh	500.00
Grant 681, W. L. Garrey	500.00
Grant 682, Helen Ingelby	500.00
Grant 683, O. Boyd Houchens (\$150, held in abeyance)	
Grant 684, Richmel Levine	1,000.00
Grant 685, Daniel J. Glomset	500.00
Grant 686, H. M. Weaver	250.00
Clerical expense	600.00
	<hr/>
	\$ 9,080.00

Balance Dec. 31, 1944. \$24,146.16

Respectfully submitted.

COMMITTEE ON SCIENTIFIC RESEARCH OF
THE AMERICAN MEDICAL ASSOCIATION.

N. W. JONES, Portland, Ore.
Term expires, 1949.
JOHN J. MORTON, Rochester, N. Y.
Term expires, 1948.
E. W. GOODPASTER, Nashville, Tenn.
Term expires, 1947.
LUNN HICKSON, Chicago.
Term expires, 1946.
MARTIN H. FISCHER, Cincinnati.
Term expires, 1945.

GRANTS OF COMMITTEE ON SCIENTIFIC RESEARCH

NEW GRANTS—1944

Grant 668, George Ulett, University of Oregon Medical School, \$250, electroencephalograms in experimental focal brain lesions.
Grant 669, Hans Popper, Cook County Hospital, Chicago, \$400, study of liver structure in relation to function tests. Refund of \$400 when grantee entered the Army.
Grant 670, Wilbur Thomas, Bowman Gray School of Medicine, \$300, experimental cardiac rupture.
Grant 671, A. M. Jasssek, Medical College of State of Carolina, \$1,000, effect of paralysis on human pyramidal system. See grants 632, 1942, and 655, 1943.
Grant 672, Archie R. Tunturi, University of Oregon Medical School, \$200, acoustic area in cortex of dog.

Grant 673, Leo Hardt, Loyola University Medical School, Chicago, \$300, new goniometer.

Grant 674, David J. Sandweiss and Thomas L. Patterson, Wayne University College of Medicine, \$750, relation of the endocrine glands to metabolism.

Grant 675, Israel Davidsohn, Mount Sinai Hospital, Chicago, \$500, problems of Rh factor.

Grant 676, Frederick M. Allen, New York, \$500, studies on refrigeration surgery and treatment. See grant 657, 1941.

Grant 677, J. LeRoy Connel, Harvard Medical School, \$500, postnatal development of the human cerebral cortex (Charles A. Hunt Fund).

Grant 678, Herbert S. Kupperman, University of Georgia, \$500, pregnancy test.

Grant 679, Theodor I. Bratrud, University of Minnesota Medical School, \$600, colored illustrations for article on congenital adrenal hyperplasia.

Grant 680, Wilhelm Rauh, University of Vermont College of Medicine, \$500, protective effect of thiamine against the toxic cardiovascular action of epinephrine and sympathin.

Grant 681, W. L. Garrey, Vanderbilt University School of Medicine, \$500, immersion of the heart of vertebrates.

Grant 682, Helen Ingelby, Woman's Medical College of Pennsylvania, \$500, problems of cystic disease and carcinoma of the breast.

Grant 683, O. Boyd Houchens, Loyola University Medical School, \$150, vitamin B deficiency in relation to cardiac function.

Grant 684, Richmel Levine, Michael Reese Hospital, Chicago, \$1,000, secretion and metabolism of progesterone in threatened abortion.

Grant 685, Daniel J. Glomset, Des Moines, Iowa, \$500, cardiac conduction. See grant 629, 1942.

Grant 686, H. M. Weaver, Wayne University College of Medicine, \$250, production and treatment of alloxan diabetic coma in rats.

STATE OF GRANT-AIDED WORK

1 GRANTS CLOSED DURING THE YEAR

Grant 481, 1937, Warren O. Nelson, Wayne University College of Medicine, \$200, synthetic indoleamine substances. Refund \$15.22. Nelson, Warren O. Renewal of Sperm Formation in Hypophysectomized Rats, *Ann. Re.* 70:148, 1944 (suppl.), Responses of the Male Sex Accessory Organs to Androgen in Hypophysectomized and Hypophysectomized Castrated Rats *ibid.*, p. 75. See grant 656, 1943.

Grant 571, 1940, Joseph T. King, University of Minnesota, \$280, autolytic effect of tissues on the action of sulfanilamide. Jensen, N. K., and Nelson, M. C. Local Sulfanilamide in Compound Fractures, *Surg., Gynec. & Obst.* 75:31, 1942.

Grant 591, 1940, Percival Bulky, University of Illinois, \$500, effects of electrolytic lesions in the perigeniculate gray matter of the Macaque monkey. Bulky, Percival and Davis, J. W. Effects of Lesions of Perigeniculate Gray Matter in the Cat, *Proc. Soc. Exper. Biol. & Med.* 51:305, 1942, The Syndrome of Obstinate Prostration in the Cat, *ibid.*, p. 307.

Grant 601, 1941, C. I. Chalmers, University of Illinois College of Medicine, \$400, bacterial metabolism. Refund \$79.62. Chalmers, C. I. The Inhibitory Effect of Oxygen on Starving Pathogenic Bacteria (abstract), *Am. J. Path.* 18:751, 1942.

Grant 617, 1941, Mary Jahn, University of Maryland College of Medicine, \$500, tests of applicability of feather germ reaction to tumor diagnosis. Jahn, Mary. Feather Germ Reaction to Urine from Patients with Cancer and Other Conditions, *Arch. Path.* 37:383, 1943.

Grant 619, 1941, Paul Thomas Young, University of Illinois, \$500, appetite and food preferences in the rat. See grants 611, 1942, and 665, 1943.

Grant 629, 1942, Daniel J. Glomset, Des Moines, Iowa, \$500, cardiac conduction—disturbances of ventricular conduction. See grant 685, 1944. Glomset, Daniel J., Glomset, Anna T. A., and Hays, Richard J. Morphologic Study of the Cardiac Conduction System III Bundle Branch Block, *Am. Heart J.* 24:338, 1944.

Grant 631, 1942, Leopold R. Cerecedo, Lordham University, \$500, vitamin B deficiency of rats and mice. See grant 663, 1943. Cerecedo, Leopold R., and Loy, John R. Relationship Between Protein Intake and Pyridoxine Deficiency in the Rat: The Role of Tryptophan and Cystine. *Endocrinology* 30, No. 1 (March) 1944, Protein Intake and Pyridoxine Deficiency in the Rat, *Arch. Biochem.* 5:207, 1944.

Grant 635, 1942, Reginald Lutz, Peter Bent Brigham Hospital, Boston, \$200, how does hyperthyroidism begin clinically? See grant 654, 1941. Lutz, Reginald. A Panoramic View of Thyrotoxicosis, *J. A. M. A.* 127:191, 1944.

Grant 641, 1942, Paul Thomas Young, University of Illinois, \$500, appetite and food preferences in the rat. See grants 619, 1941 and 665, 1943.

Grant 649, 1942, Arthur H. Smith, Wayne University College of Medicine, Detroit, \$200, metabolism of citric acid. Refund \$6.47. Chase, Robert N., and Smith, Arthur H. The Skeleton as Source of Endogenous Citric Acid, *J. Biol. Chem.* 153:363, 1944.

Grant 654, 1943, Reginald Lutz, Peter Bent Brigham Hospital, Boston, \$100, study of toxic diffuse goiter. See grant 635, 1942. Refund \$14.22.

Grant 655, 1943, Arthur M. Jasssek, Medical College of the State of South Carolina, \$300, effect of hemiplegia on the pyramidal tract. See grant 671, 1944. Jasssek, A. M. The Human Pyramidal Tract VIII. A Preliminary Investigation of the Effect of Hemiplegia on the Fiber Components of the Pyramids, *J. Neurophysiol. & Exper. Neurol.* 3:183, 1944, The Human Pyramidal Tract IX. Effect of Paralysis Produced by

Cerebral Tumors on Axons of the Pyramids, *Arch Neurol & Psychiat* 51: 213, 1944, The Pyramidal Tract A Study of the Large Motor Cells of Area 4 and the Fiber Components of the Pyramid in the Spider Monkey (*Ateles Ater*), *J Comp Neurol* 79: 407, 1943

Grant 657, 1943 Frederick M. Allen, New York Medical College, \$500, problems of shock - See grants 646, 1942 and 676, 1944 Allen, F. M. Theory and Therapy of Shock, Excessive Fluid Administration, *Am J Surg* 61: 79, 1943, Theory and Therapy of Shock, Varied Fluid Injections, *ibid* 62: 80, 1943

Grant 666, 1943 Wesley W. Spink, University of Minnesota, \$250, staphylococcal infection See grant 630 1942 Spink, Wesley W., and Vivino J. J. Sulfonamide Resistant Staphylococci Correlation of In Vitro Sulfonamide Resistance with Sulfonamide Therapy, *J Clin Investigation* 23: 267, 1944 Spink, Wesley, W., Ferris, Viola, and Vivino, Jean J. Comparative In Vitro Resistance of Staphylococci to Penicillin and to Sodium Sulfathiazole *Proc Soc Exper Biol & Med* 55: 207, 1944, Antibacterial Effect of Whole Blood on Strains of Staphylococci Sensitive and Resistant to Penicillin, *ibid*, p. 210

Grant 664 1943 S. A. Thompson, New York Medical College, \$550, omental grafts in the thorax Thompson, S. A., and Pollack, B. The Use of Free Omental Grafts in the Thorax, accepted for publication by *THE JOURNAL*

Grant 665, 1943 Paul Thomas Young, University of Illinois, \$300, food preferences in the rat See grants 619, 1941, and 641, 1942 Young, Paul Thomas Running Activity and Dietary Habit of the Rat in Relation to Food Preference, Group Self Selection Maintenance as a Method in the Study of Food Preferences, The Balance Between Hunger and Thirst, accepted for publication in the *Journal of Comparative Psychology* Young, Paul Thomas and Chaplin, James P. Food Preferences as Tested During Group Self Selection Maintenance A Study of Palatability and Appetite in Relation to Bodily Need, accepted for publication in *Comparative Psychology Monographs*

2 WORK IN PROGRESS, 1944

Grant 479, 1937 Tracy J. Putnam, Boston City Hospital, \$200, injuries to the cervical portion of the cord This research has been suspended for the duration

Grant 504, 1938 Wallace M. Yater, Georgetown University Medical School \$500, histopathology of "bundle branch" block

Grants 518, 1938, and 559, 1939 Harold D. West, Meharry Medical College, \$150, synthesis of *dl* threonine

Grant 561, 1940 Armand J. Quick, Marquette University, \$275, conversion of prothrombin to thrombin Quick, A. J. Prothrombin Concentration of the Blood in Various Species *Am J Physiol* 132: 239, 1941, Effect of Air Currents on Plasma Prothrombin, *Proc Soc Exper Biol & Med* 50: 317, 1942, On the Constitution of Prothrombin, *Am J Physiol* 140: 212, 1943

Grant 570 1940 William H. Sweet, University of Chicago, \$300, course of nerve fiber tracts of the temporal lobe

Grant 582, 1940 Charles W. Greene, Stanford University, \$500, physiology of the coronary system in monkeys Refund \$160.48

Grant 584 1940 Oscar V. Ratson, University of Pennsylvania, \$200, nystagmus

Grant 603, 1941 Harry G. Day, Indiana University, \$400, physiologic significance of zinc Active research has been suspended for the duration

Grant 607, 1941 Fritz Levy, Davis Memorial Hospital, Elkins, W. Va., \$250, study of marrow cells

Grant 613, 1941 Robert W. Virtue, University of Denver, \$200, formation of cholic acid [See grant 499, 1938, report for 1940] Research suspended because grantee is in the Army

Grant 616 1941 Robert S. Dow, University of Oregon Medical School, \$250, effects of clotting in cerebral veins See grant 566, 1940

Grant 623, 1942 Catharine MacFarlane, Women's Medical College of Pennsylvania, \$2500 value of periodic pelvic and breast examination in detecting cancer MacFarlane, Catharine, Sturgis, Margaret C., and Jettermann Faith S. The Value of Periodic Pelvic Examination in the Control of Cancer of the Uterus, *J A M A* 126: 877, 1944 See earlier grants

Grant 626, 1942 Peter P. H. de Bruyn, University of Chicago, \$400, study of osteogenic substance in laying birds

Grant 644 1942 Jacob Rabinovitch, Jewish Hospital, Brooklyn, \$240, effect of heparin on thrombosis Rabinovitch, Jacob and Pines Bernard The Effect of Heparin on Experimentally Produced Thrombosis, *Surgery* 11: 669, 1943

Grant 648, 1942 Meyer M. Harris, New York State Psychiatric Hospital, \$250, further research on muscular disease See grant 658, 1943

Grant 650 1942 Tuberculosis Committee, Minnesota State Medical Association, J. A. Myers chairman, \$1,000 tuberculosis survey of Meeker County, Minn

Grant 653, 1942 Ulrich Friedmann, Jewish Hospital, Brooklyn, \$750 types of tetanus toxin See grants 583, 1940, and 666, 1943

Grant 656, 1943 Warren O. Nelson, Wayne University, \$300, lipids in the adrenal cortex Refund \$133.08 See grant 481, 1937

Grant 658, 1943 Meyer M. Harris, New York State Psychiatric Institute, \$250, muscular disease See grant 648, 1942

Grant 659, 1943 Deborah A. Druber, Michael Reese Hospital, Chicago, \$446.57, atherosclerosis in the chick (Cardiac Research I and II) See grant 642, 1942 Druber, Deborah A., and Katz, L. N. Experimental Atherosclerosis in the Chick, *Arch Path* 36: 473, 1943 Druber, Deborah A. Spontaneous Arteriosclerosis in Chickens *ibid* 36: 46, 1944

Grant 661, 1943 Roland K. Meyer, University of Wisconsin, \$500, antihormones McShan, W. H., Wolfe, Harold R., and Meyer, Roland K. Factors Affecting the Action of Antigonadotropic Sera in Immature Rat-, *Endocrinology* 33: 269, 1943

Grant 662, 1943 Katharine M. Howell and Elta Knoll, Michael Reese Hospital, Chicago, \$750, amebic dysentery Howell, Katharine M., and Knoll, Elta Studies on *Dientameba Fragilis* Its Incidence and Possible Pathogenicity accepted for publication in *American Journal of Clinical Pathology*

Grant 663, 1943 L. R. Cerecedo, Fordham University, \$600 vitamin B deficiencies in rats and mice See grant 631, 1941

Grant 666, 1943 Ulrich Friedmann, Jewish Hospital of Brooklyn, \$1500 tetanus toxins See grants 583, 1940, and 663, 1942

Grant 667, 1943 I. M. Tarlov, New York Medical College, \$500, regeneration of cauda equina See grant 634, 1942 Tarlov, I. M. Autologous Plasma Clot Suture of Nerves Its Use in Clinical Surgery, *J A M A* 126: 741 (Nov 18) 1944

Report of the Committee on Therapeutic Research

The Committee on Therapeutic Research, a standing committee of the Council on Pharmacy and Chemistry, encourages scientific investigations in the field of therapeutics by providing funds for the prosecution of necessary research

During the year 1944 the committee issued twenty-one new grants A detailed list of these grants, together with a list of publications during 1944 and of unexpended grants made before Jan 1, 1944, are included in this report

During 1944 the following grants were issued

Grant 514 Morton McCutcheon, professor of pathology, University of Pennsylvania School of Medicine, the toxicity of sulfonamides and penicillin and the mechanism of chemotaxis in leukocytes, \$150

Grant 515 Harald G. O. Holck, associate professor of pharmacology, University of Nebraska School of Medicine, the relationship of sex to drug action, \$200

Grant 516 Nellie Perry Watts, Department of Pharmacology, Woman's Medical College of Pennsylvania, methods to prolong the action of local anesthetic drugs, \$250

Grant 517 Harry Beckman, professor of pharmacology, Marquette University School of Medicine, avian malaria, \$250

Grant 518 R. H. Rigdon, professor of pathology, University of Arkansas School of Medicine, preparation of a movie film showing pathologic changes in a case of malaria, \$125

Grant 519 Gladys R. Bucher, Department of Physiology, Woman's Medical College of Pennsylvania, pepsin in the urine, \$200

Grant 521 W. F. Hamilton, professor of pharmacology and physiology, University of Georgia School of Medicine, to investigate intravascular pressures of unanesthetized animals and man and certain problems in the field of shock and changes in the cardiac recoil curve, \$125

Grant 522 Ward J. MacNeal, director of the Laboratories of Bacteriology, New York Post Graduate Medical School and Hospital, bacteriophage phenomena, \$400

Grant 523 Ward J. MacNeal, director of the Laboratories of Bacteriology, New York Post Graduate Medical School and Hospital, experimental viridans endocarditis, \$400

Grant 524 Harry E. Morton, associate professor of bacteriology, University of Pennsylvania School of Medicine, necessity of bacteriostasis or bactericidal action to prevent infection in an animal body, \$100

Grant 525 Herbert Silvette, assistant professor of pharmacology, University of Virginia Medical School, the effect of low bromometric pressures on kidneys previously damaged, either surgically or by drugs, \$250

Grant 526 Walter G. Crump Jr., assistant professor of surgery, New York Medical College, and Herbert E. Hollander, assistant clinical professor, City Hospital the enzyme factors in the transplantation of fetal or infantile pancreatic tissue in the adult recipient, \$200

Grant 527 Ralph G. Jones, assistant professor of anatomy, Wayne University College of Medicine, diabetes mellitus produced by alloxan and its modification by various experimental procedures \$200

Grant 528 Inn J. Boyd, director of medicine, and Kurt Lange, clinical instructor in medicine, New York Medical College capillary permeability of the meninges in meningitis and meningism, \$350

Grant 529 Inn J. Boyd, director of medicine, and Kurt Lange, clinical instructor in medicine, New York Medical College the effectiveness of physical therapeutic measures in peripheral vascular diseases, \$350

Grant 530 Louis M. Palermo, assistant professor of surgery, and Boris Pollock, clinical assistant in surgery, New York Medical College, omental grafts, \$200

Grant 531 Thomas H. McGavack, associate professor of medicine, New York Medical College, the absorption of compressed pellets of the steroid hormones, \$400

Grant 532 Thomas H. McGavack, associate professor of medicine, and Herbert Elias, New York Medical College, mulin and diodrat clearances in endocrine diseases, \$250

Grant 533 Robert S. Teigue, associate professor of physiology and pharmacology, University of Alabama School of Medicine the metabolism of diethyl tolbutol and its derivatives, with emphasis on the ratio of absorption and the distribution, fate and excretion of these drugs, \$500

Grant 534 Stephen P Jewett, New York Medical College, the use of ammonium chloride in psychiatric disorders \$350

Grant 535 Lloyd D Seager, professor of pharmacology, Woman's Medical College of Pennsylvania, the pharmacology and toxicology of the diuretics, \$400

The following is a list of the investigations conducted with the assistance of grants made by the Committee on Therapeutic Research, reports of which were published during 1944

The Diuretic Effect of Gelatin Solutions C L Bridger, S L Smathers C W Cotterman, J T Dameron and J Maxwell Little *Am J Physiol* 142: 21 (Sept.) 1944

Plasma Retention, Urinary Excretion and Effect on Circulating Total Red Cell Volume of Intravenous Gelatin in Dogs with Diminished Plasma Volume, J Maxwell Little and J T Dameron *Am J Physiol* 110: 636 (Feb.) 1944

Micro Glass Electrode Technique for Determination of Hydrogen Ion Activity of Blood and Other Biologic Fluids, C Lloyd Cliff and Oliver Swenson *J Biol Chem* 152: 519 (March) 1944

Growth and Reproduction During Chronic Exposure to Carbon Monoxide, Virginia Subbie and A T Miller Jr *Proc Soc Exper Biol & Med* 55: 85, 1944

Further Studies on the Central Nervous System Action of Benzimidazole HCl, Louis Goodman and Nancy Hunt *Federation Proc* 3: 73 (March) 1944

The Diuretic Action of Benzimidazole, Louis Goodman and Nancy Hunt *Federation Proc* 3: 73 (March) 1944

The U S P Collaborative Digitalis Study Using Frogs (1939-1941), Lloyd C Miller *J Am Pharm A (scient ed)* 33: 245 (Aug.) 1944

Influence of Sex on Resistance to Oribain in the Rat, Harold G O Hoke and Kazuo K Kimura *Federation Proc* 3, March 1944

Effects of Age, Sex, Castration and Interval of Time After Parturition on the Ability of the Albino Rat to Build up Tolerance to and to Detoxify Pentobarbital Sodium, Harold G O Hoke and Donald R Matheson *J Am Pharm A (scient ed)* 33: 174 (June) 1944

Digestive Tract Intraluminal Pressures with Special Reference to Gastrointestinal Propulsion and Gastric Evacuation J P Quigley *Medical Physics (Chicago Year Book Publishers, 1944), p 310*

Application of the "Inductograph" to the Registration of Movements Particularly of Body Structures Such as the Pyloric Sphincter, D A Brody and J P Quigley *J Lab & Clin Med* 29: 863 (Aug.) 1944

Reactions Characterizing the Oxide of 6 Methyl 6 oxy 5 chloro-15 bicycloheptene, Trent B Johnson *J Am Chem Soc* 66: 146 (Jan.) 1944

The Apparent Advantage of Frequently Administered Quinine in Avian Malaria Infections Harry Beelman and Jane Smith *J Lab & Clin Med* 29: 43 (Jan.) 1944

The Influence of Diet on Sulfonamide Action, Esther M Greishamer, Robert Hefkesberg and Grace L Weitenberger *Am J Diest Dis* 11: 13 (Jan.) 1944

Effect of Estrogens on the Testis in Hepatic Insufficiency, Thomas G Morrison *Arch Path* 37: 39 (Jan.) 1944

Actions of Benzadrine and Propadrine in the Control of Obesity, M L Tuntet *J Nutrition* 27: 89 (Jan.) 1944

Acute Toxicity of Choline Hydrochloride Administered Intraperitoneally to Rats, Harold C Hodge *Proc Soc Exper Biol & Med* 57: 26, 1944

Arterial, Cerebrospinal and Venous Pressures in Man During Cough and Strain, W J Hamilton, R A Woodbury and H F Harper Jr *Am J Physiol* 111: 42 (March) 1944

The Patterns of the Arterial Pressure Pulse W J Hamilton *Am J Physiol* 111: 235 (April) 1944

Intravenous Pycnograms in Normal and Abnormal Pregnancies Deborah C Levy and John P Peters *Am J Obst & Gynec* 16: 803 (Dec.) 1943

Progressive Experimental Endocarditis, Lentr Ward J MacNeil Martha Jane Spence and Alice I Stark *Am J Path* 20: 95 (Jan.) 1944

Progress in the Study of Experimental Endocarditis, Ward J MacNeil Martha Jane Spence and Anne Blewys *New York State J Med* 44: 601 (March 15) 1944

Clinical Arrest of Bacterial Endocarditis by Bacteriostatic Agents Particularly Penicillin Ward J MacNeil Anne Blewys and Charles A Poundexter *Bull New York Acad Med* 20: 415 (July) 1944

Clinical Arrest of Endocarditis, Lentr Ward J MacNeil Anne Blewys and Charles A Poundexter *Am Heart J* 28: 669 (Nov.) 1944

The Effect of Bromide Administered During Embryonic Development on Learning Tests in Rats Ben King Harned, Hughbert C Hamilton and Vera V Cole *Federation Proc* 3: 75 (March) 1944

The Effect of the Administration of Sodium Bromide to Pregnant Rats on the Learning Ability of the Offspring, H King Harned, Ben King Harned, Hughbert C Hamilton and V A Cole *J Pharmacol & Exper Therap* 82: 215 (Nov.) 1944

The Effect of the Administration of Sodium Bromide to Pregnant Rats on the Learning Ability of the Offspring, III Three Table Test, Hughbert C Hamilton and Ben King Harned *J Psychol* 18: 163 (Oct.) 1944

The Measurement of Regional Differences in the Arterial Blood Flow in the Skin Alrick B Hertzman *Federation Proc* 3: 18 (March) 1944

Vascular Reactions to Cold Related to the Early Stages of Immersion Foot Kenneth I Jochim and Alrick B Hertzman *Federation Proc* 3: 22 (March) 1944

The Effects of Cold on the Blood Vessels of the Skin of the Forearm Kenneth I Jochim and Alrick B Hertzman *Federation Proc* 3: 22 (March) 1944

The Effects of Mecholyt Iontophoresis and of Reflex Thermal Distention on the Cutaneous Blood Flow Wilfrid C Randall and Alrick B Hertzman *Federation Proc* 3: 38 (March) 1944

Effect of Digitalis and Strophanthin on the Denervated Lymph Heart of the Bullfrog (*Rana catesbeiana*), Marion A Reid *Federation Proc* 3: 38 (March) 1944

The Antidiuretic Action of Morphine and Its Mechanism R C deBodo *J Pharmacol & Exper Therap* 82: 74 (Sept.) 1944

The following grants were issued before Jan 1, 1944. In some cases the grant has expired and an unexpended balance remains, or the work is not yet completed, or not yet published

Grant 232 George R Cowgill, associate professor of physiologic chemistry, Yale University School of Medicine, the heart in vitamin B deficiency, \$250

Grant 297 Melvin Diebach, Harvard University School of Medicine, the emetic effect of some of the digitals bodies, \$250

Grant 306 Edwards A Park, professor of pediatrics, Johns Hopkins University School of Medicine, rickets in the rat and the effect of solution of parathyroid on the calcification of the bone, \$75

Grant 355 Peter K Knoefel, professor of pharmacology, University of Louisville School of Medicine, the action of amines of the epinephrine series and of related substances on the central nervous system, \$150

Grant 408 Ephraim Shorr, associate professor of medicine, Cornell University Medical College, the effect of progesterone on the vaginal smears, \$300

Grant 412 Anne Lothes, Massachusetts General Hospital, Boston, the effect of various endocrine discs and the administration of various endocrine products on the 17 keto steroid secretion in the urine, \$400

Grant 410 J P Simonds, department of pathology, Northwestern University Medical School, the selective action of different types of poisons on the kidneys, \$100

Grant 443 A B Baker, associate professor of neuropsychiatry and neuropathology and Raymond A Bacter, professor of pharmacology, University of Minnesota Medical School, toxic effects of sulfanilamides and derivatives on nervous system and effect of vitamin B complex in prevention of such injuries, \$500

Grant 445 Paul I Dry, professor of physiologic chemistry, and John R Tatter, instructor in physiologic chemistry, University of Arkansas School of Medicine, ocular manifestations of tryptophan deficiency, \$300

Grant 449 Alrick B Hertzman, professor of physiology, St Louis University School of Medicine, peripheral circulation, \$500

Grant 505 James Orten, assistant professor of physiologic chemistry, Wayne University College of Medicine, to investigate the relationship of dietary protein to porphyrin metabolism in the rat, \$250

Grant 506 Andrew I Burton, assistant professor of pharmacology, Howard University, to investigate (1) the distribution of sulfonamide in maternal and fetal tissues at various stages of pregnancy, (2) the toxic effects of quinine on the fetus in utero, \$600

Grant 509 Thomas H McGavack, associate professor of medicine, New York Medical College, to investigate water balance under the influence of various hormones, \$350

Grant 510 Louis S Goodman, chairman department of pharmacology and physiology, University of Vermont College of Medicine, to investigate benzimidazole in comparison with other central nervous system depressants, \$800

Grant 511 K A C Whitt, Chemical Research Laboratory, the Institute of the Pennsylvania Hospital, to investigate the effects of low and high oxygen tensions on brain metabolism, \$500

Grant 512 Isaac White, Chem, associate professor of chemistry, University of Denver, the effect of sulfonamide drugs on the glycogen content of the liver of rabbits and rats, \$200

Grant 513 Ruth I Miller, professor of bacteriology, Woman's Medical College of Pennsylvania, to investigate the relationship between immune mechanisms and bacterial virulence, \$412.50

Grant 454 Frederick H Pratt, professor of physiology, and Marion A Reid, instructor in physiology, Boston University School of Medicine, the effect of cardiac drugs on the denervated lymphatic hearts, \$300

Grant 457 Edmund Wynne, associate professor of physiology, Boston University School of Medicine, the factors controlling the growth and functional efficiency of transplanted adrenal cortical tissue, \$372.50

Grant 458 George Lahr, professor of internal medicine, University of Minnesota, the effects of Isonitroide C on certain types of heart disease, \$100

Grant 459 Mary F O Sullivan, Bellevue Hospital, New York City, the therapeutic effect of estradiol in muscular dystrophy, \$160

Grant 472 Robert A Brown, professor of physiology and pharmacology, the University of North Dakota, action of pilocarpine on bile secretion, \$150

Grant 473 Richard C deBodo, associate professor of pharmacology, New York University College of Medicine, temporary and permanent effects of insulin on carbohydrate metabolism with special reference to its effects on adrenalin hyperglycemia and liver glycogen, \$400

Grant 474: Arthur C. DeGraff, professor of therapeutics, New York University College of Medicine, the effectiveness of sodium thiosulfate and sodium formaldehyde sulfoxalate in treatment of cardiac arrhythmias induced experimentally by mercurial diuretics, \$400.

Grant 477: Harold C. Hodge, associate professor of biochemistry and pharmacology, University of Rochester School of Medicine and Dentistry, acute toxicity of choline, \$200.

Grant 478: Stacy R. Mettier, associate professor of medicine, University of California Medical School, the rH factor in blood transfusion and other immunologic aspects of blood grouping, \$400.

Grant 479: Mayo H. Soley, associate professor of medicine, University of California Medical School, treatment of patients with toxic diffuse goiter by means of radioactive iodine, \$350.

Grant 483: Donald Slaughter, professor of pharmacology and physiology, Southwestern College of Medicine, to investigate the effects of sulfonamides on the regeneration of visual purple, \$150.

Grant 484: Alfred Goerner, associate professor of biologic chemistry, Long Island College of Medicine, and M. Margaret Goerner, pathologist, Brooklyn Thoracic Hospital, the toxic action of carcinogenic compounds on liver tissue, \$400.

Grant 488: L. R. Kaufman, director of surgery, New York Medical College, circulatory competence of the gut in cases of intestinal obstruction, \$125.

Grant 489: L. R. Kaufman, director of surgery, New York Medical College, the use of enzyme mixture for dissolving slough, \$100.

Grant 490: Andrew F. Burton, assistant professor of pharmacology, Howard University School of Medicine, the distribution of sulfanilamide and the toxic effects of quinine, \$698.

Grant 491: Fred D. Weidman, professor of dermatology and vice dean for dermatology and syphilology, University of Pennsylvania Graduate School of Medicine, the control of dermatophytosis and value of living *Bacillus subtilis* cells, \$500.

Grant 494: Amedeo S. Marrazzi, professor of pharmacology, Loyola University School of Medicine, to investigate sympathomimetic amines, \$500.

Grant 497: E. Ross Hart, associate professor of pharmacology, Jefferson Medical College of Philadelphia, to investigate the pharmacologic properties of N-allyl-nor-morphine and related compounds, \$250.

Grant 498: Linn J. Boyd, director of medicine, and Kurt Lange, clinical instructor in medicine, New York Medical College, to investigate the effect of cold in the treatment of shock, \$300.

Grant 499: Joseph Litwins, clinical instructor in medicine, New York Medical College, to investigate the chemistry and hematology of blood donors, \$200.

Grant 502: Julian P. Maes, department of pharmacology, Dartmouth College, to investigate the part played by the red blood corpuscle concentration of the systemic circulation in the maintenance of blood pressure at different levels of vasoconstrictor tone, \$150.

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the Year Ended December 31, 1944

Investments (At Cost) as at January 1, 1944..	\$3,258,131.33
Bonds Purchased (At Cost)	1,666,103.99
	<u>\$4,924,235.32</u>
Less:	
Bonds Called, Matured or Sold.....	327,384.85
	<u>Investments as at December 31, 1944.....</u>
	\$4,596,850.47
Balance for Investment January 1, 1944.....	207,900.01
Interest Received on Investments Year 1944..	102,906.10
	<u>310,806.11</u>
Bonds Purchased (At Cost plus Accrued Interest \$1,013.78)	243,740.25
	<u>Uninvested Funds December 31, 1944....</u>
	67,065.86
Invested and Uninvested Funds as at December 31, 1944...	<u>\$4,663,916.33</u>

DAVIS MEMORIAL FUND

Balance in Fund January 1, 1944.....	\$7,709.49
Interest Earned on Bank Balance Year 1944.....	96.66
	<u>Funds on Deposit as at December 31, 1944.....</u>
	\$7,806.15

JOSIAH J. MOORE, M.D., Treasurer.

AUDITOR'S REPORT

January 30, 1945.

To the Board of Trustees,
American Medical Association, Chicago, Illinois.

Dear Sirs:

We have examined the balance sheet of the American Medical Association, Chicago, Illinois, as of December 31, 1944, and the statement of income for the year ended on that date, have reviewed the system of internal control and the accounting procedures of the Association and, without making a detailed audit of the transactions, have examined or tested accounting records and other supporting evidence, by methods and to the extent we deemed appropriate except as hereinafter stated regarding confirmation of receivables and observation of the inventory taking.

The cash and bank balances have been confirmed by count or by certificates from the depositaries. The United States Government and other marketable securities were confirmed by an acknowledgment from the Continental Illinois National Bank and Trust Company of Chicago where the securities are held for safekeeping.

We did not independently confirm the accounts receivable by communication with the debtors. The accounts receivable were reviewed as to age and collectibility and, in our opinion, the balances are fully realizable. We reviewed the plan and system of control adopted for inventory taking but we did not observe the taking of the inventories nor did we make tests of the physical existence of the quantities recorded.

Expenditures charged to property and equipment accounts during the year, in our opinion, were properly capitalized as representing additions or improvements. The provision for depreciation for the year appears to be adequate.

In our opinion, subject to the exceptions set forth in paragraph three, the accompanying balance sheet and related statement of income present fairly the position of the American Medical Association at December 31, 1944, and the results of the operations for the year, based on the accounting procedures employed by the Association regarding which the following observations are submitted:

(a) In accordance with the established practice of the Association, the accounts as stated do not include (a) unrecorded assets in respect of accrued interest on bond investments, and membership dues unpaid; and (b) provision for accrued property taxes for the year 1944, and sundry unpaid bills and wages.

(b) Subscriptions paid in advance are stated at an estimated amount which is based on cash received in December 1944, on account of 1945 subscriptions. This procedure conforms to the method used in prior years.

(c) Advance payments on publications include an estimated amount (\$167,108.36) for prepaid subscriptions to *Hygeia*, and the amount (\$78,065.95) received in advance for January 1945, advertising, directory information sales and service.

We have received a letter from Messrs. Loesch, Scofield, Loesch and Burke, attorneys for the Association, regarding litigation pending against the Association or its officers at December 31, 1944, which states that the case of Jean Paul Fernel (\$1,000,000—libel) is pending and that in their opinion this suit will be defeated.

Fidelity insurance is carried against the undermentioned officers and employees, in the amounts stated:

Dr. Olin West, Secretary and General Manager.....	\$10,000.00
Dr. Joseph J. Moore, Treasurer.....	10,000.00
E. A. Hoffman, Cashier.....	10,000.00
J. E. Hartigan, Assistant Cashier.....	2,000.00
Hiley Ward, Accountant.....	2,000.00
Sundry employees (sixteen, \$1,000.00 each).....	16,000.00

Total Fidelity Insurance.....\$50,000.00

We have pleasure in reporting that the books are well maintained and that every facility was afforded us for the proper conduct of the examination.

Yours truly,

PEAT, MARWICK, MITCHELL & Co.

INDEX TO STATEMENTS

	Exhibit
Balance Sheet as of December 31, 1944.....	"A"
Income Account for the year ended December 31, 1944.....	"B"
Publications (Periodicals)—Costs and Expenses for the year ended December 31, 1944.....	Schedule "1"
Expenses of Councils, Bureaus and Committees for the year ended December 31, 1944.....	"2"

ORGANIZATION SECTION

I. A. M. A.
Nov. 3, 1945

EXHIBIT "A"

BALANCE SHEET

As of December 31, 1944

ASSETS:

Property and Equipment—at cost:		
Land	\$ 328,773.98	
Buildings	\$1,375,349.31	
Machinery and printing equipment.....	493,677.54	
Office and laboratory equipment.....	200,785.26	
	<u>2,069,812.11</u>	
Less—Reserve for depreciation.....	1,039,184.95	1,030,627.16
	<u>22,949.33</u>	
Type metal (book inventory)—at average cost		
Total Property and Equipment.....		1,382,350.47

Marketable Securities—at cost (valuation based on market quotations \$4,676,946.40):		
United States Government securities.....	3,021,255.87	
Railroad, municipal, public utility and industrial bonds	1,575,594.60	4,596,850.47
Representing investments of:		
General fund	1,921,850.47	
Association reserve fund.....	350,000.00	
Retirement reserve fund.....	525,000.00	
Building reserve fund	450,000.00	
Depreciation reserve fund.....	1,050,000.00	
Equipment modernization reserve fund.....	300,000.00	
Cash Held by Treasurer for Investment.....	67,065.86	
Cash in Banks and on Hand.....	328,469.26	

Accounts Receivable:		
Advertising	180,754.67	
Reprints	4,619.13	
Directory Report Service, 18th Edition....	1,100.39	
Miscellaneous accounts receivable.....	8,454.68	194,958.87

Inventories of Materials, Supplies, Work in Progress and Publications.....	95,482.41	
Expenditures on Publications in Progress.....	113,771.16	
Prepaid Expenses, Deposits and Advances:		
Insurance, etc.	8,435.63	
Deposits and advances.....	7,136.62	15,572.25
Total		<u>\$6,794,520.75</u>

LIABILITIES:

Accounts Payable:		
Co-operative Medical Advertising Bureau..	\$ 27,630.25	
Miscellaneous	40,801.04	
Total Accounts Payable.....		\$ 68,431.29
Subscriptions Paid in Advance.....	117,734.73	
Advance Payments on Publications.....	245,174.31	

Net Worth:		
Association reserve	350,000.00	
Building reserve	450,000.00	
Retirement reserve	525,000.00	
Equipment modernization reserve.....	300,000.00	

Capital account:		
Balance at December 31, 1943	\$4,105,089.08	
Add—Net income for the year ended December 31, 1944	933,091.34	
	<u>5,038,180.42</u>	

Deduct — Amount transferred during year to equipment modernization reserve	300,000.00	4,238,180.42
Net Worth, December 31, 1944.....		6,363,180.42
Total		<u>\$6,794,520.75</u>

EXHIBIT "B"

INCOME ACCOUNT

For the Year Ended December 31, 1944

Income:		
Fellowship dues	\$ 63,972.00	
Income from investments.....	98,494.04	
Miscellaneous receipts and other income.....	42,313.63	
	<u>204,779.67</u>	
Publications—Periodicals:		
Subscriptions	1,303,043.68	
Advertising	1,707,232.10	
	<u>3,010,275.78</u>	
Costs and expenses—Schedule "1".....	1,730,400.70	1,279,875.08
Books, pamphlets and reprints sold.....	107,238.95	
Less—Printing and other costs.....	63,501.85	44,237.10
Total Income		<u>1,528,891.85</u>
Expenses:		
Conducting Councils, Bureaus and Committees—Schedule "2"	459,740.12	
Legal and investigating	11,026.60	
Employees' group annuities.....	122,354.47	
Miscellaneous	2,679.32	595,800.51
Income in Excess of Expenses.....		<u>\$ 933,091.34</u>

SCHEDULE "1"

PUBLICATIONS (PERIODICALS)—COSTS AND EXPENSES

For the Year Ended December 31, 1944

Wages and salaries.....	\$ 826,518.54
Paper	292,797.89
Engravings and illustrations.....	45,495.72
Ink	18,458.05
Factory and mailing supplies.....	17,751.28
Repairs and renewals—machinery.....	5,095.30
Express and cartage.....	11,434.34
Power and light.....	14,402.14
Building expense	44,135.01
Fuel	7,834.16
Insurance and taxes.....	33,688.05
Editorials, news and reporting.....	13,815.26
Postage—first class	47,843.03
Postage—second class	62,317.78
Commissions—subscriptions and advertising.....	103,862.03
Discounts	67,012.28
Exchange	1,718.22
Subscription promotion expense.....	21,236.59
Office supplies	7,860.58
Telephone and telegrams.....	4,247.35
Office printing	27,173.24
Binding	2,969.45
Miscellaneous operating expenses.....	23,417.57
Group hospital and life insurance.....	9,136.19
Loss (profit) bad debts and recoveries—net.....	413.7
Loss on metal dress sales.....	611.61
	<u>1,713,722.62</u>

Depreciation (based on estimated remaining life):

Buildings	\$23,133.80
Machinery	13,768.50
Type and factory equipment.....	1,410.47
Furniture and equipment.....	7,411.00
	<u>45,723.77</u>
	1,759,656.39

Deduct—Proportion of overhead expenses charged to other publications and departments.....	29,252.69
Total Publications (Periodicals)—Costs and Expenses.....	<u>\$1,730,400.70</u>

Note: Total wages and salaries for year 1944 amounted to \$1,255,460.84. Of this amount, \$826,518.54 is included above, \$294,938.67 is shown in Schedule "2" (expenses of Councils, Bureaus and Committees), and the remainder, \$133,943.63, was disbursed on the maintenance of records which will be used in connection with the next edition of the American Medical Directory, and with the printing of books, reprints and pamphlets, and printing in process at the close of the year.

SCHEDULE "2"

EXPENSES OF COUNCILS, BUREAUS AND COMMITTEES

FOR THE YEAR ENDED DECEMBER 31, 1944

Salaries and wages.....	\$294,938.67
Office printing	13,287.75
Office supplies and repairs.....	6,108.40
Express, telephone and telegraph.....	5,801.96
Postage	7,791.51
Binding	577.10
Books and periodical subscriptions.....	869.87
Educational material distributed.....	5,732.09
Travel	19,760.80
Radio broadcasting	18,254.38
Inspection of hospitals and medical schools.....	3,915.06
Association exhibits	3,312.38
Trustees' meeting expenses.....	7,573.19
Consultations, investigations, tests and honorariums.....	11,711.05
Section secretaries' conference and honorariums.....	3,504.45
State secretaries' conference.....	6,802.72
Council and Bureau conferences.....	17,485.32
Committee on Scientific Research.....	7,758.00
Other committee expenses.....	8,258.58
Miscellaneous	16,296.84

Total expenses of Councils, Bureaus and Committees.....\$459,740.12

NOTE: The above expenses are spread over the following Councils, Bureaus and Committees as indicated: Association account, \$109,719.25; Bureau of Health Education, \$50,974.25; Council on Pharmacy and Chemistry, \$43,694.23; Chemical Laboratory, \$16,997.47; Council on Physical Medicine, \$18,917.60; Council on Foods, \$17,158.30; Committee on Therapeutic Research, \$6,486.05; Council on Medical Education and Hospitals, \$58,081.61; Bureau of Legal Medicine and Legislation, \$30,723.00; Bureau of Investigation, \$9,144.31; Bureau of Medical Economics, \$17,557.30; Council on Industrial Health, \$22,540.98; Association and Bureau of Exhibits, \$18,734.59; Council on Medical Service and Public Relations, \$28,712.71; Committee on Medical Preparedness, \$9,698.47.

REPORT OF THE COUNCIL ON
SCIENTIFIC ASSEMBLY

To the Members of the House of Delegates of the American Medical Association:

Because of the enforced cancellation of the annual session for 1945, the Council on Scientific Assembly has little else to report except that the usual Annual Conference of the Council with the Section Secretaries was held late in 1944. At that conference plans were made for the scientific program for 1945. Considerable progress had been made in the preparation of the section programs and the program for the General Scientific Meetings. The Council desires to express appreciation of the services of officers of the scientific sections and its regret that their efforts toward the preparation and presentation of good programs were made futile by the cancellation of the annual session.

The House of Delegates in 1941, after giving consideration to a resolution submitted by Dr. Henry A. Luee, delegate from Michigan, proposing that a Section for General Practitioners be established in the Scientific Assembly, requested the Council to arrange for Sessions for General Practitioners in the Section on Miscellaneous Topics, and this was done in 1942 and in 1944. The programs presented at those sessions attracted a rather large attendance, and the manner in which they were received seemed to indicate that there was a real desire for the establishment of a Section for General Practitioners. The Council on Scientific Assembly therefore recommends to the House of Delegates that such a section be established and that proper amendment be made to the By-Laws to include the new section.

Respectfully submitted,

A. A. WALKER, Chairman.

FREDERICK A. COLLIER.

CLYDE L. CUMMER.

EDWARD L. BORTZ.

CHARLES H. PHIFER.

ROGER I. LEE, President-Elect.

MORRIS FISHBEIN, Editor, THE JOURNAL

OLIN WEST, Secretary.

Ex officio.

Washington Letter

(From a Special Correspondent)

Oct. 29, 1945.

Approval of National Research Foundation by
American Medical Association

A statement of Dr. Morris Fishbein, Editor of THE JOURNAL, to the joint subcommittee of the Senate Commerce and Military Affairs Committees expressed approval by the American Medical Association of the proposal to set up a National Research Foundation. Dr. Fishbein pointed out that the work of the Office of Scientific Research and Development during the war had demonstrated that federal funds could be used satisfactorily to promote research and speed medical discoveries. He warned that the foundation must avoid "bureaucratic domination of research," restrictions on research or undue support in any one field. He also opposed inclusion of social sciences in the federal program, contending that findings might be used to affect legislation and influence political opinion. The committee also heard Howland H. Sargeant, patent chief in the office of the Alien Property Custodian, ask for congressional action to prevent enemy owners from capitalizing on patents.

Controversy Over Use of Influenza Vaccine by Army

A controversy is reported between medical services here over use by the Army of a new influenza serum to vaccinate all its personnel. The navy declares that the vaccine is an "experiment" and the Public Health Service has refused to license it. The Office of the Surgeon General of the Army, nevertheless, is reported to be proceeding with plans for vaccination of every man and woman in the service at home and abroad in the belief that it will prevent an epidemic. Capt. Otto L. Burton, chief of the Navy division of preventive medicine, has stated that "nobody knows what it will do or how long it will immunize." The Public Health Service reported that commercial houses have applied for the right to manufacture the new serum but that the government has declined to license it for public use.

Need for More Psychiatrists

Dr. Karl Menninger, director of the Menninger Clinic, Topeka, Kan., told the National Health Advisory Committee of the National Federation of Business and Professional Women's Clubs that there is a high incidence of mental disease among women and stressed the need for more psychiatrists. Taking part in the program were Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service; Norman Damon of the Automotive Safety Foundation; Dr. Dorothy Nyswander, consultant in health education, Inter-American Educational Foundation, and Miss Melva Bakkie, director, Nutrition Service, American Red Cross.

Health Needs of School Age Children

A report by the Health and Physical Education Service, U. S. Office of Education, states that the health and fitness needs of school children are not being met. It contends that a community health program can be more easily and efficiently carried out while the student is in school. Health activities within the school are listed as examination, immunization and follow-up leading to corrective services, plus provision for a safe, sanitary and healthful school environment.

Plans for Disposal of Surplus Property Relating
to Health

Dr. J. O. Dean of the U. S. Public Health Service was to testify on plans for disposal of surplus property relating to health, before the Kelley Subcommittee on Aid to the Physically Handicapped. Dr. H. D. Alves of the U. S. Office of Education was also authorized to describe plans for disposal of surplus educational materials. They were delegated by the Surplus Property Director to appear for him.

President's Physician to Teach in Washington

Col. Wallace Graham, appointed recently as personal physician to President Truman, is expected to join the instructional staffs of two Washington medical schools. He is already on the staff of Walter Reed Hospital.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

District Meeting.—The Fifth District Medical Society was addressed in Camden October 16 by:

Capt. Horace R. Boone (MC), Memphis, Rehabilitation of the Navy Patient.

Dr. Jacob Alperin, Memphis, Tenn., Harmful Effects of Morphine and Digitalis in Heart Disease.

Dr. Robert L. Sanders, Memphis, Tenn., The Diagnosis and Management of Obstructive Lesions of the Colon.

Vice Admiral Ross T. McIntire (MC), Medical Research in War and Peace.

At an evening public session the speakers included Governor Ben T. Laney, Arkansas, and Dr. McIntire on "War Medicine and Its Future Impact."

CALIFORNIA

County Society Considers New Home.—Members of the San Francisco County Medical Society will soon vote on the disposition of its headquarters at 2180 Washington Street, San Francisco, and the consideration of a new home. The bulletin of the society for October discusses the various aspects of the project which will be presented to the membership for vote.

School Teacher Named to Psychiatric Staff.—Miss Grace Ahrens, a school teacher, has been appointed to the staff of the child psychiatry unit of the Langley Porter Clinic of the University of California Medical School, San Francisco. The school program will be conducted for five hours each day and is being integrated with the other treatment given the mentally sick children. The school will form an important part of the treatment, since many of the children have been referred to the clinic because of behavior or other difficulties in school. With some children the school has come to be associated with painful experiences so that almost all learning is blocked, but as the child gradually reaches a better mental adjustment he also learns to accept the school situation. Some text books and the same type of treatment carried on in public schools will be used.

Funds for Tuberculosis Library.—The B. P. O. Elks Lodge Number 99 of Los Angeles has given \$12,000 to the Barlow Sanatorium of Los Angeles to establish a library for research in tuberculosis. According to Dr. Howard W. Bosworth, medical director of the Barlow Sanatorium Association, this fund is intended to finance the erection of a small building and the purchase of furniture and equipment, books and medical journal subscriptions. It is hoped to build up as complete a library as possible in the field of tuberculosis and diseases of the chest. This library will be designed to serve the staff of the sanatorium, the teaching of student nurses in tuberculosis, teaching of medical students from the University of Southern California in tuberculosis, postgraduate courses for physicians in tuberculosis, and physicians or other persons in this area seriously interested in tuberculosis. The reading room of the library will be designed for use as a class room for staff meetings, committee meetings and lectures. It will be known as the Elks' Tuberculosis Library of the Barlow Sanatorium.

COLORADO

Faculty Changes at Colorado.—The following changes in status of members of the faculty at the University of Colorado School of Medicine, Denver, were recently announced: Dr. John W. Ames, professor of clinical pediatrics emeritus, and John M. Barney, professor of medicine emeritus, both effective September 1. Dr. Arthur J. Markley was also recently made professor of dermatology emeritus. Dr. Osgood S. Philpott was recently appointed professor and head of the department of dermatology. Other changes on the faculty include the appointments at the medical school of Dr. Robert S. Liggett as assistant professor of medicine and assistant dean and Dr. Emmett A. Mechler as assistant professor of obstetrics and gynecology.

ILLINOIS

Personal.—Dr. William F. Schroeder, Rock Island, has resigned as a member of the board of the Rock Island Chamber of Commerce because he has gone to live in California. —Dr. Sander Horwitz, district health officer, who has practiced medicine in Peoria for fifty years, was made a member of the "fifty year club" of the Illinois State Medical Society, September 18. —Dr. Leslie W. Roth, Belleville, formerly assistant professor in the department of physiology and pharmacology of the University of Colorado School of Medicine, Denver, has become research pharmacologist in the department of pharmacology, Abbott Laboratories, North Chicago.

CHICAGO

Dr. Keefer Discusses Penicillin.—Dr. Chester S. Keefer, Wade professor of medicine, Boston University School of Medicine, spoke on penicillin at a joint meeting of the Institute of Medicine of Chicago and the Chicago Society of Internal Medicine on Friday evening October 26.

Pigeons to Be Tested for Disease.—The laboratory of the state department of health in Chicago will carry on tests of pigeons found near county institutions in an effort to determine the extent of disease that they may carry. Blood tests of 200 pigeons have shown positive reactions of pneumonia type virus in about forty per cent of the birds. Positive reaction to psittacosis was shown in a large number of birds. New tests are being made to establish whether the reaction was caused by present or past infection and whether the birds are carriers of the disease. Final results of tests will be submitted to Dr. Roland R. Cross, Springfield, state director of health, for a decision as to what will be done with regard to eliminating pigeon flocks in Chicago.

MARYLAND

Distribution of Medical Care.—The Baltimore City Medical Society and the National Physicians Committee for the Extension of Medical Service cooperated in a program on the distribution of medical care, October 5. The speakers were:

Dr. Dean Robert, Baltimore, chief, Bureau of Medical Services, Maryland Department of Public Health, The Medical Care Program in Maryland

Dr. Thomas A. McGoldrick, Brooklyn, trustee of the National Physicians Committee and Delegate to the American Medical Association (subject not announced).

Mr. Edward F. Stegen, associate administrator, National Physicians Committee, Reville for Medicine.

MASSACHUSETTS

X-Ray Anniversary Celebration.—The New England Roentgen Ray Society will observe the fiftieth anniversary of the discovery of x-rays November 16 at the Harvard Club, Boston. Among the speakers on the program will be:

Dr. William J. Elliott, Worcester, The Use of X-Rays in Art.

Dr. Paul E. Tivnan, Beverly, Some Industrial Applications of X-Rays.

Joseph T. Walker, Ph.D., Boston, The Application of X-Rays to Crime Detection.

Bertram E. Warren, Sc.D., Cambridge, X-Rays as a Tool of the Physicist.

Dr. Merrill C. Sosman, Boston, X-Rays in Medicine.

MICHIGAN

Institute of Industrial Health.—The Detroit Industrial Safety Council will sponsor an institute of industrial health, hygiene and nursing at the Rackham Building, Detroit, November 6-7 in conjunction with the Michigan Association of Industrial Physicians and Surgeons, Michigan Department of Health, Michigan State Medical Society, Michigan Industrial Hygiene Association, Detroit Department of Health, Wayne County Medical Society and the Detroit Industrial Nurses Association. The speakers will include:

Gordon C. Harrold, Ph.D., Detroit, DDT and Its Mixtures.

William Fredrick, Sc.D., Detroit, Soldering and Brazing Health Problems.

Marguerite F. Hall, Ph.D., Ann Arbor, Application of Public Health Statistical Methods of Health and Safety in the Factory.

Dr. Thomas Francis Jr., Ann Arbor, Upper Respiratory Infections.

Harry E. Miller, B.S., Ann Arbor, Application of Sanitary Engineering Principles to Industrial Health and Safety.

Don D. Irish, Ph.D., Midland, Volatile Solvents in Industry.

Dr. John W. Hirschfeld, Detroit, The Place of Chemotherapy in the Treatment of Traumatic Wounds.

Dr. Frank T. McCormick, Detroit, Surgical Drainage.

One session will be devoted to a symposium on heart disease as related to occupation and one on low back pain.

MINNESOTA

Association of Coroners.—The Minnesota Association of Coroners elected Dr. John W. Ekblad, Duluth, president of the organization at their annual meeting in St. Paul recently. Drs. Edwin A. Kilbride, Worthington, was made first vice president, Reino H. Puumala, Cloquet, second vice president and Russell R. Heim, Minneapolis, secretary-treasurer.

Illegal Practitioner.—Godfried Fruitiger, chiropractor, Wilton Junction, Iowa, was arrested July 25 at Pine Island for practicing healing without a basic science certificate. On July 26 he pleaded guilty to a charge of violating the basic science law and was sentenced to six months in the county jail. Sentence was stayed on condition that Fruitiger refrain from practicing healing in Minnesota. Fruitiger was practicing in a trailer at Pine Island and admitted having treated 12 patients before he was arrested. He made no direct charge for service, but patients left a "gift" of \$1.

Course in Pediatrics.—The University of Minnesota Medical School, Minneapolis, announces the first of a series of continuation courses in pediatrics for pediatricians November 7-10. Faculty for the first course will include:

Dr. Irvine McQuarrie, Minneapolis, University of Minnesota Medical School.

Dr. Henry F. Helmholtz Jr., Rochester, Mayo Foundation.

Dr. Helen B. Taussig, Baltimore, Johns Hopkins University School of Medicine.

Dr. Hugh McCulloch, St. Louis, Washington University School of Medicine.

Dr. Milton J. E. Senn, New York, Cornell University Medical College.

Dr. Charles A. Aldrich, Rochester, Mayo Foundation

Subjects to be covered include Convulsive Disorders, Child Psychiatry, Psychologic Measurement, Speech Problems, Psychosomatic Pediatrics, Physical and Mental Development, Congenital Heart Disease, Rheumatic State and Acquired Heart Disease.

MONTANA

Hospital News.—The Gallatin County Medical Association has given about \$15,000 to the campaign for funds to build, an addition to the Bozeman Deaconess Hospital; according to *Montana Health* \$51,000 has been received for the addition.

Personal.—Curtis H. Waldon, Ph.D., formerly professor of pharmacology at Purdue University School of Pharmacy, has been appointed dean of the Montana State University School of Pharmacy, Missoula, to succeed Charles E. Mollett, Ph.C., who has been associated with the school since 1907, both as professor and as dean.

Tuberculosis Officers Reelected.—Dr. E. Martin Larson, Great Falls, was reelected president of the Montana Tuberculosis Association at its twenty-ninth annual meeting in Helena September 8. Other officers who were reelected include Alex Cunningham, Helena, first vice president; Dr. Paul L. Eneboe, Bozeman, second vice president; L. S. Hazard, Helena, treasurer, and Mrs. Henrietta Crockett, Helena, executive secretary.

NEBRASKA

School Radio Health Series Opens.—First of the series of school health transcriptions recently contributed to the Omaha Public Schools by the Douglas County Medical Society was heard over KOWH September 11. The transcriptions, in a series of twelve to be broadcast weekly, are made by the American Medical Association. Title of the first was "Randy Makes Good," listing reasons for good health habits. Pictured at the presentation of the transcriptions are W. H. Waite, director of curriculum, Omaha Public Schools; Dr. Herman M. Jahr, Omaha; Fred Hill, assistant to the superintendent of schools; Dr. Charles W. M. Poynter, dean of the University of Nebraska College of Medicine, Omaha; Dr. Ernest T. Manning, Omaha, director of school health services, and Dr. W. W. Bauer, Chicago, Director of the Bureau of Health Education, American Medical Association.

NEW YORK

Frank Sutton Heads Rochester Hospital.—Dr. Frank C. Sutton, assistant director of the Rochester General Hospital, has been appointed acting medical director. He will take the place of Dr. Christopher G. Parnall, Rochester, who retired September 30 after serving as medical director for twenty years. Dr. Sutton graduated at Northwestern University Medical School, Chicago, in 1938. He has been Dr. Parnall's assistant for the past three years. Dr. John E. Gillick, New York, chief resident physician, will serve as administrative assistant. Dr. Parnall will devote full time to consultation service in hospital construction.

State Medical Election—National Casualty Company Urged.—Dr. William Hale, Utica, was chosen president-elect of the Medical Society of the State of New York at the annual meeting of the house of delegates in Buffalo October 9. Dr. Edward R. Cunniffe, New York, is president. Other officers include Dr. Stephen R. Monteith, Nyack, second vice president; Dr. Walter P. Anderson, New York, secretary; Dr. W. Guernsey Frey, New York, assistant secretary; Dr. Kirby Dwight, New York, treasurer, and Dr. James R. Reuling, Bay-side, assistant treasurer. A resolution was adopted urging an organization of a national casualty company to develop and promote voluntary medical insurance coverage in areas where none exists. The resolution stated that such a casualty company was necessary as an agency to relate the enrolment of nationwide employers to the various local nonprofit plans and can be organized wholly within the control of the medical profession.

New York City

Personal.—Ivan C. Hall, Ph.D., has resigned as professor and director of the department of bacteriology at New York Medical College, Flower and Fifth Avenue Hospitals, New York. *THE JOURNAL*, September 1, page 82, incorrectly reported that Dr. Hall was resigning from the New York University College of Medicine.

The Janeway Lectures.—Henrik Dam, D.Sc., associate member of the Rockefeller Institute for Medical Research, delivered the Edward Gamaliel Janeway Lectures at the Mount Sinai Hospital of New York, October 30-31. His subjects were "Medical Aspects of Vitamin K" and "Some Effects of Vitamin E Deficiency and Fatty Acids."

The Harvey Lecture.—Dr. Alfred Blalock, professor and director of the department of surgery, Johns Hopkins University School of Medicine, Baltimore, will deliver the second Harvey Lecture November 15 at the New York Academy of Medicine. The lecture, which will be on "Physiopathology and Surgical Treatment of Congenital Cardiovascular Defects," is the second in the series sponsored by the Harvey Society and the New York Academy of Medicine.

Conference on Chronic Pulmonary Diseases.—The thirty-fifth clinical session on chronic pulmonary diseases of the Tuberculosis Sanatorium Conference of Metropolitan New York will be held at the Cornell University Medical College Amphitheater, November 7, according to the New York Tuberculosis and Health Association. The program will include papers by Dr. Sol Roy Rosenthal, Chicago, on "Ten Years' Experience with BCG (Clinical and Experimental)" and Dr. Milton I. Levine, New York, "The Results of BCG Inoculation of Children from Tuberculosis Homes in New York City."

"X-Ray Jamborees."—October 15 marked the beginning of Harlem's chest x-ray jamborees, the highlight of a two month antituberculosis campaign in the community. Free chest x-rays are being offered during the campaign to every adult resident of Harlem, an area where tuberculosis still kills nearly ten people every week, according to the state health department. The sponsoring groups are the Central Harlem Health Center of the state department of health, the Harlem Tuberculosis and Health Committee of the New York Tuberculosis and Health Association and the Manhattan Central Medical Society.

Dr. Muckenfuss Returns.—Dr. Ralph S. Muckenfuss, New York, who commanded the first medical general laboratory in the European theater of operations and the European theater blood bank, has returned from military service to resume his position as director of the bureau of laboratories of the department of health. Dr. Muckenfuss had been on military leave since July 22, 1942. In a citation awarding him the Legion of Merit, Dr. Muckenfuss, who held the rank of lieutenant colonel, was credited with organizing the first medical general laboratory, the first organization of its type. The credit for organizing the only blood bank in the United Kingdom was also ascribed to him.

Blood and Plasma Exchange Bank.—The Medical Society of the County of New York has incorporated a nonprofit organization to make blood and plasma readily available to patients in civilian hospitals at a small cost, the *New York Times* announced October 4. The new organization will be known as the Blood and Plasma Exchange of New York Incorporated and replaces a project organized by the society four years ago which was a cooperative affair among 150 hospitals in the metropolitan area. The new corporation will have a five fold program:

To coordinate existing facilities and institutions in the New York metropolitan area for the obtaining, processing, typing, matching, transportation and supply of human blood, blood plasma and related products.

To reduce the cost and to improve and increase the supply of human blood, plasma and related products for patients in the hospitals in the New York metropolitan area.

To conduct and support research projects in the operation of human blood banks and the improvement of their procedures.

To finance the training of technical personnel for the operation of human blood banks.

To stimulate and, if desirable, to subsidize the development and operation of additional blood banks in hospitals in various regions of the metropolitan area.

Heretofore the cost of a pint of blood for transfusion has been \$41, but in the new arrangement a patient may obtain a unit of processed blood or plasma without any charge if he arranges through his family or friends to reimburse the hospital bank with two units of unprocessed blood. If no blood is replaced, the charge is \$15 for the unit. The New York *Times* states that grants will be sought from various foundations to permit a program of expansion and improvement. One of the purposes to which these funds will be devoted will be the establishment of a twenty-four hour a day telephone and delivery service operated through a central office where an inventory of the supplies of blood of all types, plasma and blood derivatives will be kept. The technical policies of the Blood and Plasma Exchange Bank have been determined by a board of governors consisting of the superintendents and transfusionists of the eight supplying hospitals, together with representatives of three of the receiving hospitals and the deputy commissioner of health. The board of directors of the new corporation will include eventually representatives of the county medical society, the city's health and hospital departments, the Greater New York Hospital Association and other agencies.

OHIO

Physician's Estate Goes to Library.—On the death of his widow, the entire estate of the late Dr. Frederick W. Walz, Cleveland, will go to the trustees of the Cleveland Public Library "to promote the welfare of the community."

Society Holds 101st Meeting.—The Northwestern Ohio Medical Association, said to be oldest organization of its kind in the state, held its one hundred and first meeting October 9 at the Commodore Perry Hotel, Toledo. Speakers included Dr. Edward J. McCormick, Toledo, Chairman of the Council on Medical Service and Public Relations, American Medical Association, on "What Lies Ahead for the Medical Profession," and Charles Coghlan, executive vice president of Ohio Medical Indemnity.

OREGON

State Society Collects Material on Its Service Members.—The Oregon State Medical Society is assembling documents and photographs, in addition to other pertinent material, of physicians who have participated in World War II, whether members of the society or not, to build up a record of Oregon's contribution in medical activities of the war. Before the collection is permanently deposited in the medical library, to be made available to historians, it will be turned over to a World War II History Project, which will have it arranged, analyzed and catalogued by trained personnel, with duplicate catalogue cards filed in the Oregon Historical Society, the state archives, the medical school library and probably the University of Oregon Library, the Oregon State College Library and the Portland Public Library. The Oregon World War II History Project is under the direction of competent historians, Luther S. Cressman, Ph.D., curator of anthropological and director, Museum of Natural History, University of Oregon; Mr. Lancaster Pollard, superintendent, Oregon Historical Society; Dan Clark, department of history, University of Oregon; and Miss Gladys M. Everett, War Public Services, Federal Works Agency. It is part of the national program originally initiated by the committee for the conservation of cultural resources, a national organization operating on the state level.

PENNSYLVANIA

Philadelphia

Dr. Sokoloff Named Chief of Tuberculosis Division.—Dr. Martin J. Sokoloff, acting chief of the division of tuberculosis of the department of Health, has been appointed chief of the division, according to *Philadelphia Medicine*.

The Pancoast Lecture.—Dr. Ross Golden, professor of radiology, Columbia University College of Physicians and Surgeons, New York, will deliver the fifth Henry K. Pancoast memorial lecture before the Philadelphia Roentgen Ray Society November 1. His subject will be "Some Problems in Abnormal Intestinal Physiology Associated with Peritoneal Adhesions and Ileus."

Changes at Woman's Medical College.—Among recent appointments of the faculty of the Woman's Medical College of Pennsylvania is that of Dr. Virgine M. Scherer-Wanmook as clinical assistant professor of syphilology. Promotions of the faculty include:

Dr. Margaret De Ronde to clinical associate professor in psychiatry.
Dr. Mary R. Curcio to clinical assistant professor of medicine.
Dr. Mildred C. J. Pfeiffer to clinical assistant professor of medicine.
Maria Wiener, Ph.D., to assistant professor of bacteriology.
Dr. F. Marian Williams to clinical assistant professor of gynecology.

Association of Ex-Resident and Resident Physicians.—The fifty-ninth annual dinner of the Association of Ex-Resident and Resident Physicians of the Philadelphia General Hospital will be held on Tuesday, December 4 at the Bellevue-Stratford Hotel, Broad and Walnut streets, at 7 o'clock. The president of the association, Dr. Lyn W. Deichler, Philadelphia, will preside and act as toastmaster. Ex-residents who do not receive notices of the annual dinner are requested to send their correct addresses to the secretary, Dr. Robert C. McElroy, 133 South 30th Street, Philadelphia 4.

GENERAL

Medical Correctional Association.—The annual meeting of the Medical Correctional Association, an affiliate of the American Prison Association, will be held at the Hotel Pennsylvania, New York, November 15-16. The meeting will be a joint session with the committee on crime prevention of the American Prison Association and includes the following speakers:

Dr. Robert V. Seliger, Baltimore, Criminal Hygiene.
Dr. Frank J. Curran, New York, Group Treatment of Criminals.
Robert M. Lindner, Ph.D., Baltimore, Practical Mental Hygiene for the Prisoner.
Dr. Ralph S. Banay, New York, Wanted—An Institute of Criminal Science.
Nesley K. Teters, Philadelphia, Fundamentals of Crime Prevention.
Sophie Robinson, New York, Wanted: An Index for Crime and Delinquency.

Illegal Prescriber of Narcotics.—The Bureau of Narcotics, U. S. Treasury, reports that one Kenneth M. Cruikshank has been charged with violation of the federal narcotic law, having executed twelve fictitious narcotic prescriptions in Jackson, Miss., while posing "as a physician from the Mississippi State Board of Health." The U. S. Attorney at Jackson has lodged a detainer against the defendant, who is now in the U. S. Public Health Service Hospital, Lexington, Ky., to which institution he was returned for violation of his probation in a case which originated at Detroit in January 1944. The Bureau of Narcotics states that Cruikshank's criminal record dates back to 1928, at which time he was 25 years old and addicted to narcotic drugs. His criminal record shows various sentences to the house of correction and Leavenworth penitentiary as well as commitment to the U. S. Public Health Service Hospital at Lexington for treatment for narcotic addiction.

Borden Award in Nutrition.—The American Institute of Nutrition will make this award in recognition of distinctive research by investigators in the United States and Canada which has emphasized the nutritive significance of the commodity which has emphasized the nutritive significance of the commodity which has emphasized the nutritive significance of the commodity which has emphasized the nutritive significance of the commodity. The award will be made primarily for the publication of specific papers, but the judges may recommend that it be given for important contributions over an extended period of time. The award may be divided between two or more investigators. Employees of the Borden Company are not eligible for this honor. The formal presentation will be made at the annual meeting of the institute in the spring of 1946. To be considered for the award, nominations must be in the hands of the chairman of the nominating committee by January 15. The nominations should be accompanied by such data relative to the nominee and his research as will facilitate consideration for the award. W. E. Krauss, Ohio Agricultural Experiment Station, Wooster, Ohio, is chairman of the nominating committee.

Council Named for Eye Bank.—Seventy-five persons have been appointed to serve as members of a council sponsoring the work for the Eye Bank for Sight Restoration, Inc. The council, with Albert G. Milbank as chairman, will aid in the plan to establish a nationwide eye bank for obtaining and making available healthy corneal tissue to restore the vision of persons whose sight has been lost through disorders of the cornea. The plan which the council is sponsoring includes research, study and instruction of ophthalmologists in the delicate surgery required in performing the corneal graft operation. Fellowships which will enable advanced study in cases of corneal disorders and in methods to increase the time which corneal tissue may be preserved and made available for use.

in sight restoration operations are also included in the plan. Similar to the function of blood banks in restoring exhausted blood supply, the eye bank was organized to make possible restoration of the sight of persons whose vision has been destroyed because of corneal disorders by replacement with healthy tissue from the eyes of other persons (THE JOURNAL, April 21, p. 1067).

Clinical Fellowships in Medicine.—In order to assist in providing opportunities for postgraduate education in internal medicine for medical officers discharged from the armed forces, the American College of Physicians has established a limited number of clinical fellowships in medicine for 1946. These fellowships are available for physicians honorably discharged from the armed forces who are fellows, associates or prospective candidates for associateship in the college. They are designed to provide opportunity for advanced clinical training in internal medicine or in any of its special fields. They are limited to a term of one year, may start at any time during 1946 and will not be renewable. Assurance must be provided that the applicant will be acceptable in the clinic in which he has chosen to work. The fellowship stipend will ordinarily be from \$1,800 to \$3,000 depending on individual circumstances. Application forms for these fellowships will be supplied on request to the American College of Physicians, 4200 Pine Street, Philadelphia 4, and may be submitted, in duplicate, at any time. Decision with respect to award of a fellowship will be made and the applicant notified of the action taken as soon as possible after receipt of the application. Dr. Francis G. Blake, New Haven, Conn., is chairman of the committee on fellowships and awards.

Comparison of War and Accident Casualties in Second World War.—The National Safety Council has prepared the following tabulation showing a comparison of wartime casualties between Dec. 7, 1941 and VJ day, August 14:

WAR CASUALTIES
(From the Army and Navy)

Killed	261,608
Wounded	651,911
Missing	32,811
Prisoners	124,194
Total	1,070,524

THE HOME FRONT ACCIDENT TOLL
(From the National Safety Council)

Killed	353,000
Injured	36,000,000
(Including 1,250,000 cases involving some permanent disability)	

ACCIDENT TOLL TO WORKERS ALONE
(On and Off the Job)

Killed on the job..... 66,000	Total workers killed on
Killed off the job..... 94,000	and off the job..... 160,000
Injured on and off the job..... 15,000,000	
(Including 360,000 cases involving some permanent disability)	

THE TRAFFIC TOLL ALONE

Killed	94,000
Injured	3,300,000
(Including 270,000 cases involving some permanent disability)	

THE TOLL IN HOMES ALONE

Killed	118,000
Injured	17,500,000

Howard Rusk Named Consultant on Physical Rehabilitation.—Col. Howard A. Rusk, M. C., has resigned from the army to serve as consultant on physical rehabilitation for the Baruch committee on physical medicine, New York. The announcement indicated that Dr. Rusk is serving the committee temporarily in an effort to apply his army experience in physical rehabilitation to the urgent civilian needs in this phase of physical medicine. The committee plans to set up a blue print for the guidance of communities in the establishment of community rehabilitation centers for service. Although the committee is not in the position to finance the construction and operation of these centers, it will, through Dr. Rusk and other authorities on rehabilitation, make up a formula for a general organization to handle the program in the various communities of the nation. The formula will contain estimates of the personnel and physical facilities required for an effective center together with the necessary administrative and professional procedures. It is estimated that there are twenty-three million persons in the United States who, through injury, disease, maladjustment or from their experiences in former wars, are in need of physical or functional rehabilitation or both. It is estimated that at present there is a backlog of one million people who are in need of such care to make them employ-

able. There were forty-four thousand people in 1944 who had undergone such care. Their average income before such rehabilitation was started was \$162 annually per person. The first year after such rehabilitation their average income was \$1,750 per person. This rehabilitation work is considered the third phase of medical care, the first phase being preventive medicine and the second diagnosis and treatment. Colonel Rusk, before the war, practiced internal medicine in St. Louis and also was instructor in medicine at Washington University School of Medicine there. In December 1942 he established for the Army Air Forces at Jefferson Barracks the first rehabilitation program in the armed forces. In 1943 he was given the Lord and Taylor American Design Award for a notable contribution in the field of rehabilitation. For the past several months he has been chairman of the subcommittee on civilian rehabilitation centers of the Baruch committee.

CANADA

Medical Committee on Atomic Energy.—Chalmers J. Mackenzie, D.Sc., president of the Canadian National Research Council, Ottawa, has announced that a special medical committee has been appointed to act as general directing body on medical research in the field of atomic energy, according to *Science*. The members are Drs. Duncan Graham, Toronto; James B. Collip, Montreal, and Dr. Joseph S. Mitchell, Montreal.

LATIN AMERICA

Health Activities in Latin America.—*Latin American Medical Association Formed.*—A new inter-American organization, open to physicians from all over the hemisphere, has been formed under the name of the Latin American Medical Association. At its first meeting in Mexico City, held recently, the following officers were chosen: Drs. Juan Rafael Herradora-Ubeda, Jersey City, N. J., president; Pedro Jose Zepeda, vice president; Gonzalo Valdes, secretary; Manuel de la Torre Morali, assistant secretary, and Victorio Lorani, director. Headquarters are in Mexico City. Its object is to promote the scientific advantage of medicine through the interchange of all problems except those of a religious or political nature. It hopes to organize lectures and postgraduate courses, award prizes and honorary mention for meritorious contributions to medicine in the hemisphere and establish closer relations with North and South American medical groups. It has also taken over sponsorship of the Spanish language medical journal *El Progreso Medico* (Medical Progress), which has already been published for six years.

Colombia Plans Socialized Medicine.—According to Dr. Carlos Vera, Cucuta, a physician attached to the social welfare department of the province of Santander, Colombia, the country is planning a program of socialized medicine which will affect workers in both industry and government. The physician arrived in Miami, Fla., September 24, on a commission by the Colombian government to study social security laws in the United States, according to the *Pan American World Airways*.

Argentine-British Medical Center in Buenos Aires.—An Argentine-British Medical Center has been established in Buenos Aires, with the assistance of the British Council, to promote closer relations and to facilitate the exchange of information between the British and Argentine medical professions, according to the *British Medical Journal*. The center has a committee of honor, the twenty-two Argentinian members of which include Drs. Jose Arce, Pedro Escudero, Bernardo A. Houssay and Alfredo Sordelli. British representatives of various branches of medicine have been invited to join this committee. On the executive committee are the president of the center, Dr. Mariano R. Castex; the director, Dr. Antonio Egues; the secretary, Dr. R. Castro O'Connor; an assistant secretary, three ordinary members, and two representatives of the British Hospital in Buenos Aires.

Special Society Elections.—Recently elected officers of the Sociedade de Pediatria da Bahia, Brazil, are Drs. Eliezer Audiface, president; Arnaldo Santana, vice president, and Elisio Athaide and Joao Pedroza Cunha, secretaries. —Recently elected officers of the Sociedad de Pediatria de Córdoba are Dr. Juan Francisco Herrera, president; Dr. J. Nicola Beltramo, vice president; Dr. Bernardo Serebrinsky, secretary, and Horacio H. Sanchez, treasurer.

New Director of Finlay Institute.—Dr. Arturo Curbelo Hernandez, professor of bacteriology of the University of Havana School of Medicine and Pharmacy, has been appointed director of the Finlay Institute of the Americas.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 29, 1945.

The Socialist Government and the British Medical Association

The socialist government has been sobered by experiencing the responsibilities of office. The speeches of its members are full of the difficulties which confront them on the path to the promised utopia of their election addresses and differ little from the addresses made by members of the late government. This is illustrated in a speech made by Mr. Bevan, the new minister of health, as the guest of the Royal Medico-Chirurgical Association at its annual dinner. Mr. Bevan said that the framing of a national health service was a task of great perplexity and delicacy in which he invited the cooperation of the medical profession. He knew that he had to break down some suspicions, but he was distinctly optimistic and believed that before the end of another year we would have a medical service which would make Britain the envy of other nations. A nation which had achieved so much during the last six years would not fail to surmount the difficulties. The war had destroyed many hospitals, and there was a shortage of nursing staff. It was the function of the Ministry of Health to provide physicians with the best and the most modern apparatus of medicine and to enable them to use it freely in accordance with their training. The individual citizen must be free to choose his doctor; the doctor must be able to treat his patient in conditions of privacy. He regarded the general practitioner as the most important man in the medical profession. He knew that there were doctors who felt that a state medical service was likely to be too much under the control of a bureaucracy. But, though he was a socialist, he believed in industrial democracy and therefore felt that doctors as a profession must have a greater and greater voice in the management of their own services, exactly as he wanted similar power for miners, railway men and engineers. But he was going to do many unorthodox things, to try a number of experiments, in which he hoped to have the cooperation of the medical profession. It will be obvious that this declaration of policy is very different from that reported in a previous letter, in which Bevan denounced his predecessor, the conservative minister of health, for surrendering to the medical profession, although he entered into negotiation, the very thing now foreshadowed.

Dr. Charles Hill, secretary of the British Medical Association, said in reply that Mr. Bevan's human and reassuring speech encouraged confident expectations. When Mr. Bevan met the doctors he would find men no less earnest than himself for the health of the people. It had become fashionable to regard individual doctors with love and respect and doctors collectively as reactionary and opposed to the public interest. They would soon, he hoped, be able to convince yet another minister that the profession had the fullest intention and desire to cooperate in obtaining the best possible health service. But Dr. Hill did not believe that the best public interest would be served by converting an independent profession into a branch of central or local government.

Organizing the Use of Medical Films

A scientific film association was formed in 1943 for the collection, collation and distribution of scientific films and to promote their appreciation and use. In July 1944 a medical standing committee was formed under the chairmanship of Mr. McAdam Eccles, a surgeon. In cooperation with the association a catalogue of all the medical films in Britain is now being prepared, which is regarded as an important work. It

will list all the medical films known to exist here and will record under each title a summary of content and critical appraisal, prepared by a panel of experts in the subject matter depicted, as well as the usual details of availability and length. As new films are completed details will be given in supplements, and films withdrawn from circulation will be noted. A comprehensive recording system is used which other countries are considering. The catalogue will probably be published part by part, and first instalments are expected toward the end of this year. The medical committee of the association has already presented eighteen films at the Royal Society of Medicine to audiences averaging over 200. A new selection devoted to specialized subjects is being planned for the autumn. A memorandum on films required to be made immediately for use in teaching is being drawn up. A letter sent out earlier in the year to the deans of medical teaching schools has brought many detailed replies, on which the memorandum will be based. The correspondence of the committee now extends overseas to organizations in Australia, Canada and the United States and to individual members in other countries.

DDT as Malaria Preventive

A new use for dichlorodiphenyl trichloroethene, which has proved so useful in the destruction of noxious insects, is predicted. Indian army medical authorities, with the cooperation of the Indian air force, are testing the possibilities of reducing malaria in India by spraying DDT from the air. The first trial was made at Delhi on the banks of the Jumna, a breeding area for mosquitoes too large to be controlled effectively by ground methods. Entomologic data collected by the Malaria Institute of India before and after spraying showed that adult mosquitoes had been reduced by as much as 50 per cent on some parts of the ground sprayed while the larvae had been destroyed over the entire area. Experiments are to be continued in other malarial areas of the country.

PARIS

(From Our Regular Correspondent)

Sept. 29, 1945.

Syphilis and Social Measures of Prevention

At a meeting of a permanent committee on social hygiene at the Ministry of Public Health Dr. Cavaillon gave the results of a study made by him and Dr. Renard on the course of syphilis from 1921 to 1944. In twenty cities the cases of primary syphilis are as follows: 1921, 2,400 cases; 1927, 900; 1931, 1,500; 1938, 600; 1941, 600; 1942, 900; 1943, 1,200; 1944, 1,400. This recrudescence of syphilis is to be explained by war and occupation. The difficult economic situation has contributed to increased clandestine prostitution, which is one of the main causes of venereal diseases. The minister of the interior, acting on a proposal of the minister of public health, has taken several measures to combat clandestine prostitution. Steps are to be taken to find out prostitutes through inquiries and controls, with frequent inspections in bars, music halls, dance halls, cabarets and other places of amusement. The sick will be sent to a hospital or clinic. Those with a profession from which they derive a normal income will not be subjected to the degrading measure of the "prostitutes' police card." They will have to submit to compulsory sanitary control at least once a week; this will include on each occasion a serologic and bacteriologic examination. The prostitutes will then receive a medical certificate, which they must always carry with them. The prostitute who will not submit to these examinations or who is too often absent from the examinations without proving a change of life can be submitted to the "police card."

The minister of public health has sent a circular to doctors, hospitals and venereal disease centers emphasizing the necessity

of intensifying the search for cases of recent and old syphilis and of the occult type. He prescribed, among other measures, the medical inspection of employees of big industrial and commercial concerns and of administration offices as well as the permanent attendance and medical control of families of patients affected with dementia paralytica. He insists on the obligation of tracing venereal diseases by compulsory medical prenuptial examination, by the two antepartum examinations and by the medical control of milk handlers, wetnurses, nurses and all persons attending children.

Trend of the Demography of Paris

Marcel Moine, statistician to the Comité National de la Defense Contre la Tuberculose has reported vital statistics for Paris and the department of the Seine.

According to the table the lowest birth rate occurred in 1939-1940 on account of the mobilization, the 1943 rate was higher but did not reach that of 1935. At the same time the mortality rate, which diminished in 1939, reached 37,207 deaths in 1944, and this with reference to a diminished birth rate, as against 34,698 in 1935. The birth rate is lower in the districts inhabited by people in good circumstances—down to 58 per 10,000 inhabitants, as against 114 per 10,000 for the

Births and Deaths During Ten Years

Years	Paris		Seine	
	Live Births	Deaths, Not Including Stillborn	Live Births	Deaths, Not Including Stillborn
1935	33,047	34,698	63,734	64,096
1936	32,196	34,620	62,014	63,308
1937	31,541	33,739	61,569	63,008
1938	30,976	33,572	60,880	63,984
1939	24,864	30,150	49,543	58,035
1940	22,670	31,637	44,310	61,767
1941	20,301	30,600	48,474	60,637
1942	28,690	36,150	51,410	66,501
1943	31,030	33,097	54,767	59,610
1944	29,968	37,207	51,999	63,160
Totals	290,208	340,508	548,660	637,961
Deficit		50,230		80,301

entire population. As to mortality, the districts having the highest birth rate are most affected. Moreover, Mr Moine gives a death rate of 152 per 10,000 inhabitants for the poorer districts, as against 76 for those having a fair standard of living.

The author contends that with some adjustments these statistics can be applied on a national scale.

In order to remedy this low birth rate, says the author, it is not enough to recommend more large families. To guarantee a sufficient natality and healthy children the level of general hygiene must be improved, healthy lodgings must be procured, social disease (such as tuberculosis) must be energetically combated. Moreover, the disappearance of underfeeding and its consequences will effectively contribute to improvement in the situation.

Death of Marc Tiffeneau

Marc Tiffeneau, whose death occurred at the age of 73, had been professor of pharmacology and medicine at the Faculté de médecine since 1926. He had been a member of the Académie de médecine since 1927 and of the Académie des sciences since 1939. In the late Society of Nations he was also a member of the Committee on International Control of Narcotic Drugs. His researches regarding general hypnotics and anesthetics and tuberculin are well known. Quabain was discovered in his laboratory. Under the occupation he belonged to the Medical and University Resistance Movement.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Sept 22, 1945

Military Medicine News

The War Department has released for publication some information about the medical assistance to the wounded Brazilian soldiers returning from Italy and treated at the Army Central Hospital of Rio de Janeiro under the direction of Col Florencio de Abreu. The first group of evacuated soldiers arrived at Rio de Janeiro in September of last year, a little more than two months after the first contingent of troops departed from this city. Little by little more wounded soldiers arrived. Up to the date of the release, the Army Hospital has received 1,068 wounded soldiers, of which about 75 per cent are entirely cured or in course of convalescence. The remaining 25 per cent have been discharged, as they have been considered incapacitated for service. Of all the 1,068 evacuated soldiers, only 1 died at the hospital. The Brazilian Army Medical Corps has adopted all the American methods of handling the wounded soldiers.

After their discharge from service and return to civil life, some of these wounded persons will still need the care of reconditioning and rehabilitation, a task that has to be done in part by the orthopedic services of the municipal hospitals of the city of Rio de Janeiro. For this reason the surgeons of these hospitals are being prepared for this special work. The first step in preparation has been the presentation, by the Bureau of Health Information, in cooperation with the Division of Moving Pictures of the Coordinator of Inter-American Affairs, of some useful medical films prepared by the United States Army and lent by Col Howard R Lackay, M C, U S Army, of the Brazil-United States Military Commission. The subject of the films has been explained by Lieut Emdio S Montenegro of the medical corps of the Brazilian army.

Drs Alfredo Monteiro, Ernani Alves, Estelita Lins, Mazzi-Bueno and several other prominent surgeons who served in the Brazilian Expeditionary Force in Italy have recently arrived from Europe. The National Academy of Medicine, the Rio de Janeiro Society of Medicine and Surgery and the Brazilian College of Surgeons have held special meetings to greet these surgeons. A few of them have read papers describing the advances of surgery in the present war, particularly at the front in Italy.

Personal

Dr J Barcala, associate professor of neurology at the University of Buenos Aires, spent a few days in Rio de Janeiro. At the medical department of the Bureau of Fisheries of the Ministry of Agriculture, he read a paper on the diagnosis and surgical treatment of sciatica.

Dr I L Nves Manta, associate professor of clinical psychiatry at the University of Rio de Janeiro, has been elected a member of the National Academy of Medicine of this city.

Marriages

WILLIAM LABELLE HOWELL, Fort Worth, Texas, to Miss Patricia Herbst in Washington, D C, August 20.

JAMES FRANCIS KEGAN, Burke, Idaho, to Miss Rose Antoinette Ewald of Wytheville, Va, September 1.

GEORGE P JONES JR, Memphis, Tenn, to Lieut Sarah Martha Goodson at Atlanta, Ga, August 28.

ALFRED JARFTZKI III, New York, to Miss Sonia Lasell in Whitinsville, Mass, August 31.

MAX M GITLIN, Bluffton, Ind, to Miss Mary Lawson at Seattle, August 16.

THEODORE S HOWELL, Houston, Texas, to Miss Mildred Hendrix recently.

Deaths

Henry Alexander Miller, Philadelphia; Yale University School of Medicine, New Haven, Conn., 1933; D.D.S., Evans Institute, University of Pennsylvania, in 1929; born in New Haven, Conn., Oct. 10, 1904; specialist certified by the American Board of Plastic Surgery and the American Board of Otolaryngology; diplomate of the National Board of Medical Examiners; member of the American Medical Association, College of Physicians of Philadelphia and the Philadelphia Laryngological Society; first lieutenant, medical reserve corps, U. S. Army, not on active duty; instructor in maxillofacial surgery at the University of Pennsylvania Graduate School of Medicine; chief, department of radiology, visiting oral surgeon, Philadelphia General Hospital; affiliated with the Post-Graduate, Presbyterian, Children's, University of Pennsylvania and Chestnut Hill hospitals; associate editor of the *Dental Digest*; died in the University of Pennsylvania Hospital July 14, aged 41, of acute endocarditis.

Henry Hedden, Memphis, Tenn.; M.B. in 1916 and M.D. in 1918, Queen's University Faculty of Medicine, Kingston, Ont., Canada; served in the medical corps of the Canadian army during World War I; a founder and first president of the *Memphis Hospital Association* and the *Tennessee Hospital Association*; served as president of the *Southeastern Hospital Association* and of the *Hospital Association of the Methodist Episcopal Church, South*; a charter fellow of the *American College of Hospital Administrators* and formerly a regent of region number six; member of the *American Hospital Association* and the *American Protestant Hospital Association*; at one time superintendent of the General Hospital in St. John, N. B., Canada; superintendent and trustee of Porter Home and Leath Orphanage; superintendent of the Methodist Hospital, where he died July 30, aged 54, of cerebral hemorrhage.

Walter Nixon Thompson * Sullivan, Ind.; Rush Medical College, Chicago, 1886; one of the founders and at various times president of the Sullivan County Medical Society; has been affiliated with the *Associated Anesthetists of the United States and Canada*; served as a captain in the medical corps of the U. S. Army during World War I; captain, medical reserve corps, U. S. Army, not on active duty; one of the founders of the R. H. Crowder Memorial Hospital; first president of the Mary Sherman Hospital; in February 1936 was given a banquet by the Sullivan County Medical Society in recognition of his fifty years in the practice of medicine in Sullivan; died July 17, aged 80, of carcinoma of the stomach.

Albert Harold Aland * Los Angeles; Western Reserve University School of Medicine, Cleveland, 1916; member of the Utah State Medical Association and the Pacific Coast Ophthalmological Society; fellow of the American College of Surgeons; specialist certified by the American Board of Otolaryngology; served as demonstrator of anatomy at his alma mater; at one time on the staffs of the Charles T. Miller Hospital in St. Paul and St. Mary's Hospital in Minneapolis; formerly head of the eye, ear, nose and throat department, Thomas D. Dee Memorial Hospital in Ogden, Utah; on the staffs of the Santa Monica (Calif.) Hospital and St. John's Hospital; died July 24, aged 56, of coronary occlusion.

James Sutcliffe Hill * Bellows Falls, Vt.; University of the City of New York Medical Department, 1884; health officer; honorary member of the Vermont State Medical Society; for many years secretary of the board of pension examiners for Windham County, surgeon for the Rutland Railroad and member of the New York and New England Association of Railway Surgeons, of which he had been president; on the staff of the Rockingham General Hospital; served as a member of the Rockingham Library Board for many years, part of the time as secretary of the board and in late years as president; died July 2, aged 85, of carcinoma of the stomach.

John Dickenson, Shaker Heights, Ohio; Western Reserve University Medical Department, Cleveland, 1901; member of the American Medical Association; past president of the Academy of Medicine of Cleveland; fellow of the American College of Surgeons and past governor of the board; served as chairman of the central committee of Ohio on fractures and dislocations of the American College of Surgeons; a trustee of the Cleveland Medical Library Association; assistant clinical professor of surgery at his alma mater; formerly chief of staff at St. Vincent Charity Hospital, Cleveland, where he died July 9, aged 68, of arteriosclerosis.

James A. Alexander, Indianola, Miss.; Medical College of Alabama, Mobile, 1888; veteran of the Spanish-American War; died in the Veterans Administration Facility, Memphis, July 21, aged 79, of carcinoma.

Marian Arvine-Coleman, New York; Eclectic Medical College of the City of New York, 1900; died July 22, aged 75, of cerebral hemorrhage.

Henry E. Bartling, Pacific, Mo.; Beaumont Hospital Medical College, St. Louis, 1894; member of the American Medical Association; died June 16, aged 73, of diabetes mellitus and subacute nephritis.

Alex McNeill Blue, Carthage, N. C.; Tulane University of Louisiana School of Medicine, New Orleans, 1915; member of the American Medical Association; on the courtesy staff of the Moore County Hospital; formerly part time county health officer; died July 11, aged 58, of pulmonary thrombosis.

William Alva Brady, Union City, N. J.; University of Vermont College of Medicine, Burlington, 1901; member of the American Medical Association; examining physician for the Hudson County Selective Service appeal board; served during World War I; veterans' medical examiner during World Wars I and II; formerly mayor of Union City; physician for the Hudson County Penitentiary; died in Keene, N. H., July 14, aged 69, of intestinal obstruction.

George L. Carder, Hagerstown, Md.; University of Maryland School of Medicine, Baltimore, 1891; died in the Washington County Hospital July 19, aged 81, of chronic myocarditis and bronchopneumonia.

Stephen Adelbert Craig * Ontario, Calif.; College of Physicians and Surgeons, medical department of the University of Southern California, Los Angeles, 1919; served during World War I; died June 26, aged 52.

William Jordan Davis, St. Louis; St. Louis University School of Medicine, 1906; died in the Pike County Hospital, Louisiana, Mo., July 28, aged 70, of carcinoma of the stomach.

Lee O. Greene, Pea Ridge, Ark.; St. Louis College of Physicians and Surgeons, 1902; member of the American Medical Association; died in Bentonville July 4, aged 65, of cerebral hemorrhage.

Frank Tucker Hopkins, New York; College of Physicians and Surgeons, medical department of Columbia College, New York, 1885; member of the American Medical Association and the American Otolological Society, Inc., for many years connected with the New York Eye and Ear Infirmary and St. Luke's Hospital; died July 5, aged 88, of pneumonia.

William James Howard, Washington, D. C.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; died in the Freedmen's Hospital July 6, aged 63, of shock following a prostatectomy.

John Robert Kennedy, DeQueen, Ark. (licensed in Arkansas in 1903); died June 10, aged 75, of cerebral hemorrhage.

Paul Duncan McGehee * Mobile, Ala.; University of Alabama School of Medicine, 1910; died July 10, aged 59, of cardiorenal vascular disease.

James H. Moroney, Winchester, Ind.; Starling Medical College, Columbus, 1885; member of the American Medical Association; served as city and county health officer; on the staff of the Randolph County Hospital; died July 8, aged 89, of chronic myocardial failure.

John E. Oakley, Memphis, Tenn.; Memphis Hospital Medical College, 1900; died in the Baptist Memorial Hospital July 3, aged 65, of coronary thrombosis.

Edwin Spooner Potter, Santa Barbara, Calif.; University of Pennsylvania Department of Medicine, Philadelphia, 1891; served during World War I; major, medical reserve corps, U. S. Army, not on active duty; died July 6, aged 75, of cerebral hemorrhage.

John William Ridenour, Ada, Ohio; Eclectic Medical Institute, Cincinnati, 1899; died July 10, aged 77, of carcinoma of the intestine.

Clement Dare Smedley, Youngstown, Ohio; Medical College of Ohio, Cincinnati, 1903; served during World War I; died July 8, aged 69, of carcinoma of the rectosigmoid.

Anna Topaz, Providence, R. I.; Tufts College Medical School, Boston, 1903; for many years on the staff of the Miriam Hospital; died June 19, aged 73, of injuries received when struck by a trolley car.

Edward Comstock Wilson, * * * * * 1907; Washington University School of * * * * * died in Edgewater Beach, Md., Ju. * * * * * edema, coronary heart disease and arteriosclerosis.

Correspondence

EARLY HEALING IN FRACTURES

To the Editor:—Referring to a communication of mine published in *THE JOURNAL*, August 4, under the heading "Early Healing in Chronic Osteomyelitis and Compound Fractures," I have just received a letter from Col. Leonard T. Peterson, M. C., U. S. Army, on duty in the Surgeon General's Office.

Dr. Peterson calls my attention to the fact that early work along the lines I discuss was done in the Mediterranean theater by Col. E. D. Churchill, who was making some use of secondary closure in compound fracture wounds. The second point to which Colonel Peterson calls attention is that Capt. E. M. Burgess was preceded in the use of skin graft for earlier closing of such wounds by Major Robert P. Kelly, chief of the orthopedic section at Ashford General Hospital, White Springs, W. Va. Colonel Peterson says that Major Kelly discussed this method at our meeting of the American Orthopedic Association in 1944.

With regard to either primary or secondary closure of these wounds, that has been described and discussed by many surgeons ever since Chisholm of the Confederate Army advocated it during the Civil War. I am still opposed to that for the reasons that I have stated on many occasions. With regard to the skin graft covering of wound surfaces, however, that is a distinct contribution to the program I have been advocating, and I am glad to refer credit back to Major Kelly, as suggested.

H. WINNETT ORR, M.D., Lincoln, Neb.

ACUTE SECONAL POISONING

To the Editor:—I have just read with much interest the report by Wheelock and Freedman (*THE JOURNAL*, September 8, p. 130) under the caption "Acute Seconal Poisoning." My attention was especially arrested by the sentence which reads "A survey of the literature has failed to reveal any cases of seconal poisoning which terminated fatally."

Obviously the writers of that article, even though they may have heard of the late lamented Will Rogers, did not follow his example and "read the daily papers." Had they done so I am certain that they would have seen the news articles on the death of the noted evangelist Amy Semple McPherson, which occurred at the Leamington Hotel in Oakland, Calif., about a year ago. And I am equally sanguine that they would have noted therein the fact, established by the medicolegal autopsy performed by Dr. Gertrude Moore, that the cause of death was an overdose of sodium isoamylal, commercially known as "seconal."

I am induced to proffer this commentary since I believe it will serve to place needed emphasis on the all too frequent appearance of references to "the literature" without notation as to the thoroughness with which such search has been pursued. Likewise it serves to stress the fact that the 'scientific literature,' despite its great volume, is not all inclusive by any means, and that especially in the realm of legal medicine and toxicology a search has not been complete until it has embraced a study of the court abstracts published for each of several sections of this country, and in several foreign countries as well, and also has included a scanning of the daily, weekly and monthly secular publications, which habitually print news items or commentaries on such occurrences.

If the authors, or any other interested and qualified persons, desire the data regarding the findings in the case of Amy Semple McPherson, I am sure that such could be obtained from either the district attorney of Alameda County or from Dr. Moore.

ALBERT G. HULETT, M.D., Oakland, Calif.

Director of Laboratories, Alameda County.

A WARNING CONCERNING THE PROMISCUOUS USE OF CURARE IN POLIOMYELITIS

To the Editor:—Considerable interest has been aroused by Dr. Nicholas S. Ransohoff's preliminary report on the use of curare in 4 cases of acute poliomyelitis (*THE JOURNAL*, September 8, p. 129). Interest is perhaps greater in areas where the disease has reached epidemic proportions, as is true in Salt Lake City.

Despite the fact that much remains to be learned about the pharmacologic aspects of curare, particularly its effects on the central synaptic transmission, all investigators are agreed that it is a most powerful agent in causing peripheral neuromuscular paralysis and is capable of producing respiratory paralysis and death.

Kabat and Knapp (*J. Pediat.* 24:123 [Feb.] 1944) have described the effects of anesthetic agents and beta-erythroidine on muscle hypertonicity in poliomyelitis. My own experience with the use of curare for the same purpose was reported in another connection (*Rocky Mountain M. J.* 41:313 [May] 1944) and relief of hypertonicity was found to be transitory, as a rule, even when patients receive sufficient curare to produce complete respiratory arrest.

Curare is perhaps one of the greatest aids added to the anesthesiologist's armamentarium in recent years. While practically all observers are in agreement with regard to the low toxicity of curare when properly employed, it is a dangerous weapon in the hands of the inexperienced and untrained. Its use should be reserved for those who are familiar with its clinical and pharmacologic actions, its untoward effects and the precautions necessary to avoid them. Particularly, one should be capable of performing endotracheal intubation for administration of artificial respiration.

Curare should be administered with caution, especially to patients having respiratory embarrassment or impairment in function of the throat muscles. By its own action the drug can make it difficult or even impossible for a patient to swallow, cough or expectorate and can cause death from respiratory paralysis.

Curare should be administered only when the following conditions have been fulfilled:

1. The physician must have had experience with it and be familiar with its pharmacologic action.
2. Antidotes such as neostigmine and ephedrine should be ready for immediate use.
3. Apparatus for maintaining an adequate airway, including endotracheal equipment and oxygen, should be available, and the physician should be skilled in its employment.

SCOTT M. SMITH, M.D., Salt Lake City.

Director of anesthesiology, University of Utah Medical School.

CALAMINE AND ZINC OXIDE

To the Editor:—Capt. Paul A. Newton continues an ancient error in his communication on vesicopustular eczema (*THE JOURNAL*, September 8, p. 150). Referring to treatment, he mentions calamine lotion being used on the body surfaces and zinc oxide applied to the lesions of the axillae.

Calamine is zinc oxide plus some iron rust. Calamine has no virtues over zinc oxide, and many disadvantages. It would be best if calamine were removed from professional medicine. Neocalamine is a slight improvement in color but is still essentially zinc oxide. The rationale of application of zinc oxide to the human integument is the same as its rationale in utilization in wall paint—to cover.

Zinc oxide may be safely substituted for its colored form calamine or neocalamine in all formulas for the skin.

HERMAN GOODMAN, M.D., New York.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

30:1-108 (July) 1945

- Dilution Curve of Activity in Arterial Blood After Intravenous Injection of Labeled Corpuscles G. Nylin—p. 1.
Changes in Precordial Electrocardiogram Produced by Extension of Anteroseptal Myocardial Infarction F. F. Rosenbaum, F. N. Wilson and F. D. Johnston—p. 11.
Measurement of Lung to Face Time by Amyl Nitrite D. Gross—p. 19.
Coarctation of Aorta: Report of 2 Cases, Relating Clinical Data to Degree of Constriction Measured at Necropsy, with Method of Standardization for Related Measurements D. DeF. Bauer and Lalla Iverson—p. 30.
Rupture of Ventricular Myocardium Report of 4 Cases with Comments on Pathogenesis and on Clinical Significance of Possibility of Cardiac Rupture in Prognosis of Coronary Artery Disease H. N. Segall—p. 39.
*Interventricular Septal Defect (Roger's Disease) Occurring in Mother and Her 6 Month Fetus A. W. Tucker Jr and T. D. Kinney—p. 54.
Effects of Amyl Nitrite on Downward T Wave of Electrocardiogram E. Goldberger—p. 60.
*Incidence of Embolic or Thrombotic Processes During Immediate Convalescence from Acute Myocardial Infarction R. M. Nay and A. R. Barnes—p. 65.
*Case of Infection with *Brucella suis*, Causing Endocarditis and Nephritis; Death from Rupture of Mycotic Aneurysm E. L. DeGowin, J. R. Carter and I. H. Borts—p. 77.

Interventricular Septal Defect in Mother and Fetus.—Tucker and Kinney observed identical congenital cardiac lesions in a 20 year old mother and in her 6 months fetus. In each instance the lesion was a defect in the interventricular wall (Roger's disease) occurring at the base of the heart in the so-called undefended space. This lesion was diagnosed during life in the mother and proved by necropsy, while the lesion in the infant was demonstrated at necropsy. Heredity has often been mentioned as a possible factor, although few cases have been described as occurring in parent and offspring or in siblings. Further suggestive evidence that certain cases of congenital heart disease are due to inherent defects in the germ plasma is the not uncommon association of other congenital defects with congenital cardiac abnormalities. In Vierordt's series of 700 cases of congenital heart disease there were 80 cases with associated anomalies, while in Abbott's series of 1,000 cases 188 had associated anomalies elsewhere in the body. It is quite possible that the paucity of reports of congenital heart disease occurring in succeeding generations is due to the fact that relatively few persons suffering from congenital heart disease reach an age at which reproduction normally occurs.

Embolic and Thrombotic Processes During Convalescence from Myocardial Infarction.—Nay and Barnes studied 100 consecutive cases of coronary occlusion encountered at the Mayo Clinic. The criteria for diagnosis included an attack of severe substernal pain accompanied by sweating, pallor, fall of blood pressure and sometimes by collapse. In all instances positive electrocardiographic evidence was present. When death occurred during the period of observation and necropsy was performed, the clinical diagnosis was substantiated. Only patients who had entered one of the hospitals in Rochester, Minn., within a few days of the acute attack and had remained for a period of at least two weeks, unless death occurred prior to the conclusion of that period, were included. Complications of a thrombotic or embolic nature occurred in 37 cases. In 4 the complication caused death and in 8 cases the complications were contributing factors in the death. A second myocardial infarction occurred in 15 cases, pulmonary

embolism occurred in 14 cases, cerebral thrombosis or embolism complicated 8, arterial occlusions were noted in 4, and thrombophlebitis complicated 7. Forty-six of the patients were known to have had normal blood pressure prior to the coronary occlusion and myocardial infarction. Ten of these had subsequent myocardial infarctions during the immediate convalescent period. Forty-two of the 100 patients had had hypertension prior to coronary occlusion, and 2 of these had subsequent myocardial infarctions during the immediate convalescent period. Eighty-seven per cent of the cases of second myocardial infarction and 87 per cent of the instances of cerebral vascular accidents occurred between the fourth and the twentieth day, and 86 per cent of the cases of thrombophlebitis occurred between the tenth and the sixteenth day, periods when the blood pressure of patients who have acute myocardial infarction has been demonstrated to be at lowest levels. Thirteen of the patients died: 2 of cerebral thrombosis, 1 of pulmonary embolism, 1 from a second myocardial infarction and 2 of congestive heart failure, in the other 7 the exact cause was not ascertained.

Infection with *Brucella suis*.—DeGowin and his associates report studies on a farmer, aged 45, who had *Brucella suis* bacteremia. The infection lasted about two hundred days, during which endocarditis and nephritis developed. He recovered from uremia, only to succumb to rupture of a mycotic aneurysm of the left femoral artery. Sulfonamide therapy and the administration of convalescent serum failed to influence the infection. The pooled serum was prepared from the blood of donors who had recovered from *Br. suis* bacteremia. Anatomic studies after death revealed ulceration and vegetations on a previously normal mitral valve. The specific nature of the lesions was proved, during life, by the repeated isolation of *Br. suis* in pure culture from the blood stream, and, after death, by obtaining pure cultures of *Br. suis* from the vegetations from the endocardium, the walls of the mycotic aneurysm and other tissues. The blood contained specific agglutinins, but the skin did not react to brucellergen intradermally. As far as the authors are aware, this is the first reported case in which ulcerative endocarditis has been proved, beyond doubt, to be due to *Br. suis*. It is the second reported instance in which rupture of a mycotic aneurysm due to *Br. suis* has caused death.

American Journal of Surgery, New York

69:141-280 (Aug.) 1945

- Plastic Surgery of Nasal Fractures E. S. Lamont—p. 144.
Bilateral Nodular Fibromas of Nipples with Unilateral Fibroma and Papilloma Mamillae J. J. Cunningham, S. E. Cohen and J. R. Cunningham—p. 155.
Surgical Management of Substernal and Intrathoracic Goiter A. W. Blain and A. DeMott—p. 160.
Skin Grafting in Moribund Burned Patients L. W. Eisenstadt—p. 168.
Technic of Continuous Pentothal Anesthesia N. B. Kornfield—p. 177.
Inguinal Herniorrhaphy T. L. Hyde—p. 182.
*Treatment of Pulmonary Embolism L. S. Pilcher—p. 190.
Relative Efficacy of Penicillin, Tyrothricin, Streptothricin and Sulfathiazole on Hemolytic *Streptococcus* in Wounds of Rabbits E. Neter, R. S. Hubbard and T. G. Lambert—p. 204.
Use and Abuse of Cesarean Section L. G. Waters—p. 208.
Fractures of Acetabulum W. R. MacAuland and H. G. Lee—p. 213.
Paget's Disease of Nipple J. Kaufman—p. 221.
Asymptomatic Pyuria in Young Men F. A. Beneventi—p. 224.
Ethyl Alcohol Intravenously as Postoperative Sedative R. J. Belan—p. 227.
Ambulatory Method for Treatment of Pilonidal Disease Preliminary Report J. L. Matheis—p. 230.
Undescended Testicle M. S. Rosenblatt—p. 232.
Procedure for Preventing Wound Contamination During Appendectomy B. J. Ficarra—p. 234.
*Multiple Primary Malignancies C. Goldman—p. 265.

Treatment of Pulmonary Embolism.—Pilcher reports 5 cases in which accurate diagnosis of femoral vein thrombi was made largely through venography and in which satisfactory results were obtained by ligating and partially resecting the involved femoral vein. Three of the patients had suffered pulmonary emboli before the femoral vein ligation was performed. The diagnosis of femoral vein thrombosis, when it is not associated with obvious thrombophlebitis (and the cases not associated with obvious thrombophlebitis are the most dangerous from the point of view of pulmonary embolism), is often difficult to make because of the slight clinical symptoms. If the possibility is kept in mind the diagnosis can often be suspected

and the suspicion verified by venography. Treatment can then be instituted before a fatal pulmonary embolism occurs. The question of the relationship of edema of the leg to femoral vein thrombosis interested the author especially. He observed that severe edema was present only when there was definite thrombophlebitis in the peripheral veins and was slight or absent when there was a bland femoral thrombosis, even though the femoral vein was completely obstructed up to the saphenous junction. The contrast between the old and the new method of treatment is brought home forcibly when a patient who has had a near fatal pulmonary embolus is able to leave the hospital walking two weeks later. In addition to the removal of danger of further pulmonary emboli, the operation of ligation and partial resection of the femoral vein had a beneficial effect on associated thrombophlebitis; particularly in the prevention as well as the relief of associated peripheral edema.

Multiple Primary Carcinoma.—The subject of this report, a woman aged 60, had four primary carcinomas: (1) a medullary carcinoma of the breast, (2) a postirradiation carcinoma in the scar of the chest wall, with recurrence, (3) a transitional cell carcinoma of the cervix and (4) a papillary adenocarcinoma of the rectum. All lesions differed histologically, and no lesion was a metastasis of another. A search of the literature by Goldman did not reveal other reports of four primary carcinomas in 1 patient.

Annals of Internal Medicine, Lancaster, Pa.

23:1-28 (July) 1945

- Benign Paroxysmal Peritonitis. S. Siegal.—p. 1.
*Tissue Calcification and Renal Failure Produced by Massive Dose Vitamin D Therapy of Arthritis. T. S. Danowski, A. W. Winkler and J. P. Peters.—p. 22.
Syndrome of Psos Myositis and Fibrositis: Its Manifestations and Its Significance in Differential Diagnosis of Lower Abdominal Pain. J. A. Greene.—p. 30.
Aids in Physical Diagnosis: Signs over Lower Left Lung Caused Chiefly by Cardiac Enlargement. E. M. Chapman and R. G. Anderson.—p. 35.
Diagnosis and Surgical Treatment of Ménière's Disease (Hydrops of Labyrinth). K. M. Day.—p. 41.
Effect of Doryl (Carbaminoylecholine) in Treatment of Peripheral Vascular Disease. G. Saland, R. Rosenthal, C. Klein and H. Zurorow.—p. 48.
Integration of Exact Sciences in Allergy Research. L. N. Gay.—p. 53.
Classification and Nomenclature of Leprosy, with Suggestions for Simplification of Both. H. L. Arnold Jr. and I. L. Tilden.—p. 65.
Current View of Rabies Problem. J. Casals.—p. 74.

Tissue Calcification and Renal Failure Following Vitamin D Therapy.—Danowski reports 2 cases of renal damage secondary to prolonged therapy with vitamin D. In 1 of these extensive calcification of soft tissues was demonstrable. The extensive destruction of bone evident in the wrists and right hip of 1 of the patients is an anomalous development in the natural course of atrophic arthritis. It suggests that the extensive intake of vitamin D together with a low intake of calcium and phosphorus produced disruption of the structure of the bone of the type reported in rats, with subsequent absorption of the injured bone. During the first five of the six years of therapy the patient did not drink milk nor did she receive supplementary calcium. In the last year she took one or two glasses of milk daily during a period of one month. No clear principle has been formulated for a rational use of vitamin D in arthritis. Its introduction followed the chance finding that patients receiving this vitamin for allergic conditions experienced a coincident improvement in arthritis. It has been shown in rats that vitamin D may produce either an increase or a decrease in the bone ash. Clinically, improvement in arthritis during administration of vitamin D is not correlated with any consistent alteration in the density of the skeleton or of exostoses. In serial roentgenograms the osteoporosis may increase, decrease or remain unchanged. It seems that the favorable effects of vitamin D reported in arthritis are unrelated to the metabolism of calcium and phosphorus. The authors conclude that the therapy of arthritis with vitamin D demands careful supervision. The patient should never be permitted to continue treatment on his own initiative. Frequent determinations of the serum calcium with prompt reduction of dosage if hypercalcemia develops are essential. Repeated examinations of the urine and blood pressure must be made if renal complications are to be avoided.

Archives of Internal Medicine, Chicago

76:1-62 (July) 1945

- Healed Subacute Bacterial Endocarditis. P. Rosenblatt and L. Loewe.—p. 1.
Studies on Hypertension: IV. Bioassay of Vasoconstrictor Substances in Ultrafiltrates of Citrated Blood Plasma from Patients with Normal Blood Pressures, Patients with Essential Hypertension and Patients Made Hypertensive by Intravenous Injections of Angiotonin (Hypertensin). R. Gregory, P. L. Ewing, W. C. Levin and G. T. Ross.—p. 11.
*Optimum Dose of Sulfadiazine in Treatment of Pneumococcal Pneumonia. M. F. Collen and E. Phillips.—p. 22.
Reversal of Lingual Atrophic Changes with Nicotinamide Therapy. E. L. Sevringhaus and Emma D. Kyhos.—p. 31.
Arteriosclerotic Peripheral Vascular Disease in Diabetes. J. Herzstein and L. A. Weinroth.—p. 34.
Effect of Intravenously Administered Solution of Acacia on Animals. R. E. Smalley, M. W. Binger, J. L. Bollman and M. H. Power.—p. 39.
Habitus of Patients with Active Sickle Cell Anemia of Long Duration. T. Windsor and G. E. Burch.—p. 47.
Circulation in Acute Myocardial Infarction. A. Selzer.—p. 54.

Sulfadiazine in Pneumococcal Pneumonia.—Collen and Phillips determined the optimal dose of sulfadiazine through observations on 1,465 patients with pneumococcal pneumonia treated at the Permanente Foundation Hospital in Oakland, Calif. In the first half of this period 618 consecutive patients were treated with the usual doses of sulfadiazine, namely 5 Gm. initially and 2 Gm. every six hours thereafter, an average blood level of 8 to 10 mg. per hundred cubic centimeters being maintained. In the second half of this period 748 consecutive patients with pneumococcal pneumonia were treated with double doses of sulfadiazine. The majority of patients in the group receiving the double dose received 5 Gm. of sodium sulfadiazine in 500 cc. of sixth molar sodium lactate solution (pH 7.0 to 7.2) intravenously and 5 Gm. of sulfadiazine orally (total 10 Gm.) initially followed by 4 Gm. of sulfadiazine orally every six hours thereafter, an average blood concentration of sulfadiazine of 12 to 20 mg. being maintained. The two groups of patients had pneumococcal pneumonia of comparable severity. Adjuvant therapy, including the use of specific pneumococcus serum, was similar in the two groups. The treatment of patients with pneumococcal pneumonia with double doses of sulfadiazine resulted in a decrease in the gross mortality from 10.7 to 6.2 per cent; a decrease in the incidence of sterile pleural effusions from 5.2 to 2.7 per cent and a decrease in the average number of days in the hospital required for recovery (66 per cent required less than seven days, as compared to 45 per cent). There was no greater incidence of drug toxicity in patients treated with double doses of sulfadiazine than in those treated with usual doses. The authors conclude that for severely ill adult patients with pneumococcal pneumonia sufficiently large doses of sulfadiazine should be administered to maintain blood concentrations of at least 15 mg., with the optimal blood levels maintained preferably at about 20 mg. of sulfadiazine per hundred cubic centimeters.

Archives of Pathology, Chicago

40:1-80 (July) 1945

- *Mixed Tumors of Salivary Glands. C. A. Hellwig.—p. 1.
Hematic and Anatomic Changes in Dogs After Repeated Intravenous Injections of Large Amounts of Inulin Solution. W. C. Hueper.—p. 11.
The Brain in Leukemia: Clinicopathologic Study of 20 Cases, with Review of Literature. F. Leidler and W. O. Russell.—p. 14.
Comparative Efficacy of Pancreatin and Pepsin in Experimental Production of Intestinal Ulcers. R. L. Driver.—p. 34.
Experimental Nephropathies: III. Calcification and Phosphatase in Kidneys of Dogs Poisoned with Mercury Bichloride, Potassium Dichromate and Uranyl Nitrate. O. E. Hepler and J. P. Simonds.—p. 37.
Osteoid Sarcoma of Breast: Complication of Fibroadenoma. A. Rottino and C. P. Howley.—p. 44.
Solitary Giant Follicular Lymphoma of Vermiform Appendix. R. P. Morehead and W. E. Woodruff.—p. 51.
Influence of Dietary Deficiencies and Various Poisons on Histochemical Distribution of Phosphatase in Liver. M. Wachstein.—p. 57.
Carcinoma Derived from Adult Seminiferous Epithelium: Review of Literature and Report of Case. B. E. Stofer.—p. 68.

Mixed Tumors of Salivary Glands.—Hellwig discusses observations on 82 primary tumors of salivary glands that have been studied during the last twenty years in the laboratory of the St. Francis Hospital, Wichita, Kan., among 4,352 cancers. The average age of the patients with mixed tumors was 38.4

years. More women were operated on for mixed tumors and more men for true cancers of the salivary glands. Sixty-eight tumors were located in the parotid glands, 12 in the submaxillary glands, 3 in the palate and none in the sublingual glands. Histologically, 51 of the 82 tumors were of mixed tumor type, 16 were of the adenomatous type, 8 presented combinations of these two types and 7 were true cancers. The salient feature of mixed tumors is the transformation of epithelial cells into myxochondroid tissue. The origin of tumor cells which can appear as of epithelial and again as of mesenchymal nature is not satisfactorily explained by the three current theories of the histogenesis of the mixed tumors of the salivary glands. From embryologic, histologic and topographic studies it is concluded that mixed tumors of the salivary glands are derived from misplaced elements of the notochord. This view would explain not only the complex structure of mixed tumors but also the striking predilection of these tumors for the parotid glands.

Bull. of the U. S. Army Med. Dept., Washington, D. C. 4:123-244 (Aug.) 1945

- Use of Small Airplanes for Medical Evacuation on Luzon. M J Musser Jr. and E. C. Townsend—p. 191.
*Symptomatology of Early Schistosomiasis Japonica. H M. Thomas Jr. and D. P. Gage—p. 197.
Cross Connections at Army Installations. H. H. Gerstein—p. 203.
Drugs in Treatment of Periodontal Disease. I. Buchin—p. 209.
Recognition of Leptospirosis Infections. W. W. Stiles—p. 214.
Pulsating Hematoma: Report of Cases. J. D. Martin Jr.—p. 219.
Importance of Careful Selection of Soldiers for Ligation of Varicose Veins. W. L. Butch and J. C. Harberson—p. 226.
Filariasis in the White Man. H. Neumann—p. 230.
Sudden Death in Patient Supposed to Have Myocarditis Following Scrub Typhus. J. E. Benjamin, R. R. Porter and R. H. Dreisbach—p. 235.

Symptomatology of Early Schistosomiasis Japonica.—Thomas and Gage report observations on 41 patients infected with schistosomiasis following the invasion of Leyte Island. All were studied within three months of their first infection. In 4 of these cases a history of burning and itching immediately after exposure was obtained. Symptoms which appeared between the third and ninth weeks were chills, fever, sweats, headache, backache, nonproductive cough, abdominal discomfort and profound anorexia. Urticaria accompanied these symptoms in one fourth of the cases and diarrhea in one fifth. The temperature was usually low in the morning and higher in the afternoon, reaching from 99 to 105 F. There was leukocytosis which rose from day to day, reaching a count as high as 50,000. Eosinophilia was present, at first to the extent of 15 to 20 per cent, later rising rapidly, reaching 50, 70 and, in a few cases, 90 per cent. The total number of eosinophils was often as high as 20,000. In 1 case 86 per cent of 54,400 white blood cells or 44,700 eosinophils were recorded. Patients varied from being practically asymptomatic to being extremely ill. Those with high fever sweat profusely, especially at night. They found it difficult to take nourishment and complained of severe headache, abdominal distention and cramps, and tenderness over the liver. Cough was troublesome and was often worse at night. The authors describe 2 cases which illustrate the course of schistosomiasis. Chemotherapy consisted of antimony and potassium tartrate in some instances and fuadin in others. No untoward reactions to fuadin were noticed. The commonest side effect of the antimony and potassium tartrate was nausea. Symptoms were promptly relieved in most cases, and eggs disappeared from the stools at least temporarily in many instances.

Journal of Experimental Medicine, New York

82:77-156 (Aug.) 1945

- Plasma Protein Production Influenced by Amino Acid Mixtures and Lack of Essential Amino Acids: Deficiency State Related to Unknown Factors. S. C. Madden, F. W. Anderson, J. C. Donovan and G. H. Whipple—p. 77.
Bacteriostatic Effect of Human Sera on Group A Streptococci. I. Type-Specific Antibodies in Sera of Patients Convalescing from Group A Streptococcal Pharyngitis. S. Rothbard—p. 93.
Id.: II. Comparative Bacteriostatic Effect of Normal Whole Blood from Different Animal Species in Presence of Human Convalescent Sera—p. 107.
Id.: III. Interference with Bacteriostatic Activity by Blockage of Leukocytes. S. Rothbard—p. 119.
Chemical Alteration of Bacterial Surface, with Special Reference to Agglutination of B. Proteus OX-19. S. S. Cohen—p. 133.
Investigations on Occurrence of Rh Substances in Amniotic Fluid. E. Witelsky and J. F. Mohn—p. 143.

Military Surgeon, Washington, D. C.

97:85-176 (Aug.) 1945

- Anti Malaria Measure on Indo-Burmese Border from 1942 to 1944. B. M. K. Afridi and J. H. Arthur—p. 85.
Atheromatosis to Be Distinguished from Arteriosclerosis. J. B. Wolfe—p. 92.
Troop Casualties Aboard an Attack Transport. E. S. Groseclose—p. 100.
Phobias in Pilots. D. B. Davis—p. 105.
Chemotherapeutic Adjuncts in Treatment of Necrotic Gingivitis. Review. A. H. Horowitz and S. L. Horowitz—p. 112.
Metacarpal Neck Fractures. J. R. Vasko—p. 121.
*Conservative Treatment of Human Bite Infections: Report of 2 Cases. M. G. Henry—p. 122.
Myotonia Congenita. E. J. Denenholz and M. Blum—p. 126.
Method to Shorten Hospitalization of Patients with Pilonidal Cyst. H. E. Kennard—p. 132.
Cardiac Wound Caused by Spine of Stingray (Suborder Masticura). Report of Case—p. 135.
Plastic and Reconstructive Surgery of Hand. B. Cannon and W. C. Graham—p. 137.
Psychiatric Consultations in the Army. C. N. Sarlin—p. 139.
Salmonella Outbreak Involving Three Types of Genus. C. C. Randall and L. M. Marks—p. 144.
Failure of Oral Quinine and Atabrine Therapy in Patient with South Sea Malaria. W. L. Noe Jr. and G. Cheney—p. 146.
Simple Apparatus for Continuous Intravenous Anesthesia. P. A. Waters and J. L. Diamond—p. 150.
Mycotic Infections of Feet Among Soldiers. T. A. Dolce—p. 152.

Treatment of Human Bite Infections.—Henry describes 2 cases of human bite infection, both involving the right hand. All such wounds should be immediately cleansed well with soap and water, followed by gentle débridement. Dark field examinations and ten day anaerobic cultures are diagnostic aids. Tetanus antitoxin or a booster shot should be given. The wound should be irrigated with hydrogen peroxide and diluted solution of sodium hypochlorite. These wounds should never be sutured or repaired, but they should be left wide open and sprinkled with sulfonamide crystals. Hot magnesium sulfate or boric acid soaks should be applied daily for one week. The Wassermann and Kahn tests should be made and repeated one month from the time of the bite. Amputation should be avoided in the presence of an acute infection. Treatment should be conservative, and nature should be allowed to wall off the process. Bone involvement must be ascertained by x-ray at the time of injury and again later. Because rest aids the healing process, splinting is essential. Though penicillin has slight if any effect on certain mixed infections, a ten day treatment with penicillin would be indicated, 100,000 units being administered each day.

New Jersey Medical Society Journal, Trenton

42:205-250 (July) 1945

- Penicillin Treatment for Syphilis and Gonorrhea, State of New Jersey. Department of Health—p. 227.
Nutrition in Everyday Practice. S. W. Kalb—p. 227.

42:251-282 (Aug.) 1945

- Chest X-Ray in Wartime Industrial Examinations. W. L. Bonnet—p. 253.
Management of Recurrent Vesiculopustular Eruptions of Hands and Feet. C. C. Carpenter—p. 262.
Neuropsychiatric Screening of Selective Service Registrants in New Jersey. E. Frankel—p. 268.
Nutrition in Everyday Practice. S. W. Kalb—p. 274.

Radiology, Syracuse, N. Y.

45:107-212 (Aug.) 1945

- Roentgen Diagnosis of Pulmonary Infarcts. G. R. Krause—p. 107.
Roentgen Appearance of Lobar and Segmental Collapse of Lung: IV. Collapse of Lower Lobes. L. L. Robbins and C. H. Hale—p. 120.
Value of Gastric Pneumography in Roentgen Diagnosis. S. F. Thomas—p. 128.
Rapid Development of Bone Changes in Patient with Syringomyelia as Observed Roentgenologically. E. P. Pendergras, G. D. Gurnon and J. H. Powell—p. 138.
Unusual Pleural Effusions. S. Katz and H. R. Reed—p. 147.
Radon Ointment Treatment of Irradiation Ulcers. R. E. Iricke and M. M. D. Williams—p. 156.
Capsular Osteoma of Knee Joint. Report of 4 Cases. I. G. Kautz—p. 162.
Filing and Cross Indexing of Radiation Therapy Records. I. LaPore—p. 168.
Cross Indexing of Roentgen Diagnostic Records. Revision of Hodge and Lampe Code. B. R. Van Zwaluwerburg—p. 176.
Objectives of Radiologic Aspects of Tuberculosis Control Program. H. E. Hilleboe and R. H. Morgan—p. 185.
Note on Cholecystography with Prudax: Dosage and Gastric Motility Effects. H. Quastler—p. 190.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London 26:67-136 (April) 1945

- *Production of Severe Hepatic Injury in Rats by Prolonged Feeding of Maize Meal Porridge (Mealhep) and Sour Milk. J. Gillman, T. Gillman, J. Mendelstam and C. Gilbert—p. 67.
Glucose Content of Tissue Fluid in Hypoglycemic Coma. W. Mayer Gross and J. W. Walker—p. 81.
Properties and Pathogenicity of Virus Derived from Sheep Dermatitis. F. R. Selue—p. 89.
Some Observations on Penicillinase. H. Proom—p. 98.
Treatment with Antitoxin of Experimental Gas Gangrene Produced in Guinea Pigs by (a) Clostridium Welchii, (b) Clostridium Oedematiens and (c) Clostridium Septicum. D. G. Evans—p. 104.
*Study of Hemopoiesis in Pernicious Anemia Bone Marrow. I. Japa—p. 111.
Antibacterial Effects of Analogues of Vitamin K. P. Atkins and J. L. Ward—p. 120.
Hyaluronidase Production by Streptococci. H. Schwabacher, A. C. Cunliffe, R. E. O. Williams and G. J. Harper—p. 124.
Influence of Shaking on In Vitro Production of Soluble Bacterial Toxins. E. S. Duthie and J. A. H. Whyte—p. 130.

Hepatic Injury in Rats from Corn Meal Porridge and Sour Milk.—Gillman and his associates fed rats weighing 50 Gm on a diet of corn meal porridge and sour milk. At the end of fifteen months they had severe liver damage manifesting itself as a diffuse fatty liver, cirrhosis, lobal absorption or diffuse lobal enlargement. One or more of these pathologic processes may be present in the same liver. Biopsies of the livers of these rats, performed at frequent intervals, revealed that fat appears in the liver cells at the end of fourteen days and increases steadily until, after two hundred and fifty days, the liver is diffusely enlarged as the result of the accumulation of single large fat globules in almost all the liver cells. At this stage the sinusoids are for the most part closed, and the liver is relatively avascular. Thereafter secondary changes may occur leading to the absorption or diffuse enlargement of entire lobes or to nodular cirrhosis. It appears that the hepatic parenchyma and the interstitial tissue react independently of each other to the dietary injury. Cirrhosis is not a necessary sequel to hepatocellular damage, and whole lobes of the liver may be absorbed without stimulation of the connective tissue elements. In the development of the liver lesions there are two distinct phases. The first manifests itself as a diffuse accumulation of fat in the liver cells and the second as a vascular change, which may culminate in complete lobal absorption or may be associated predominantly with a fibrous tissue reaction with or without the regeneration of liver cells. A long standing fatty liver does not necessarily culminate in cirrhosis or lobal absorption. The absorption of an entire lobe implies a complete suppression of the reparative powers of the liver, together with the inhibition of some factor essential for the survival of the parenchyma and interstitium. Animals weighing over 100 Gm are resistant to the effects of this diet as compared with younger animals (50 Gm.). On this diet growth is apparently an essential factor for the development of liver damage.

Hemopoiesis in Pernicious Anemia.—Japa studied hemopoiesis in a woman aged 65 with typical pernicious anemia. Three specimens of sternal marrow were obtained by the usual technic—one before treatment, the second at the peak of the reticulocyte response on the sixth day after the parenteral administration of the liver extract and the third four weeks later, when considerable improvement in the peripheral blood count had taken place. The pathologic changes observed affect all three cell systems of the bone marrow and are in each of them of the same essential character. The analysis of the process of mitosis shows that the essential abnormality of hemopoiesis in pernicious anemia is the inhibition of the cell capacity for division, resulting in the prolonged duration of mitosis, its decreased frequency and earlier cessation, with consequent differentiation at an earlier genealogic stage. These changes seem to be closely connected with the lack of the proper development of the nucleoli and possibly some pathologic changes in the nucleic acids metabolism induced by the insufficient supply of the hemopoietic principle.

Journal of Physiology, Cambridge

104:1-104 (June) 1945

- Diurnal and Sampling Variations in Determination of Hemoglobin. R. H. Mole—p. 1.
Determination of Hemoglobin and Methemoglobin. S. Kallner—p. 6.
Formation of Acetylcholine in Cell Free Extracts from Brain. W. Feldberg and T. Mann—p. 8.
Effect of Adrenalectomy on Contractile Power of Skeletal Muscle. A. Schweitzer—p. 21.
Regional Distribution of Sweating. J. S. Weiner—p. 32.
*Digestibility of Phytate P of Oatmeal in Adult Man. E. W. H. Cruickshank, J. Duckworth, H. W. Kosterlitz and G. M. Warnock—p. 41.
Testing Diphenylethylamine Compounds for Analgesic Action. E. C. Dodds, W. Lawson, S. A. Simpson and P. C. Williams—p. 47.
Behavior of T. 1824 (Evans's Blue) in Circulating Blood and Modified Method for Estimation of Plasma Volume. E. W. H. Cruickshank and I. C. Whitfield—p. 52.
Effect of Chronic Administration of Adrenalin on Suprarenal Cortex and Comparison of this Effect with that of Hexestrol. M. Voet—p. 60.
Influence of Duration of Sensitization on Anaphylaxis in Guinea Pig. L. B. Winter—p. 71.
Electric Response of Human Eye. E. D. Adrian—p. 84.

Digestibility of Phytate P of Oatmeal.—Cruickshank and his associates report observations on 4 adult subjects consuming a diet rich in oatmeal. They found that the phytate P of oatmeal was almost completely digested by the 4 adult subjects when the calcium intake approached requirement, and the P of the hydrolyzed phytic acid was absorbed from the intestine. Addition of calcium to the diet decreased the digestibility of phytate P if the supplementary calcium was taken together with the oatmeal and not if it was taken separately.

Lancet, London

2:1-32 (July 7) 1945

- Organization of Airborne Surgical Center. J. C. Goughier and G. C. Wells—p. 1.
Air Arthrography in Diagnosis of Torn Semilunar Cartilage. E. G. Herzog—p. 5.
*Late Bone Lesions in Caisson Disease. 3 Cases in Submarine Personnel. C. C. M. James—p. 6.
Fatigue Fracture of Tibia. 3 Cases at a Naval Training Establishment. T. P. Mann—p. 8.
Fatigue Fracture of Femur and Tibia. H. R. I. Wolfe and J. M. Robertson—p. 11.
Stress Fracture of Femoral Neck. J. A. W. Bingham—p. 13.
Vitamin C Content of Milk as Consumed. E. H. Mason and S. K. Kon—p. 14.
*Positive Influence of Water Supply on Health. Margaret M. Murray and D. C. Wilson—p. 23.

Late Bone Lesions in Caisson Disease.—In 1931 a submarine sank in 120 feet of water. Five of the crew escaped and survived, using the Davis apparatus. They all suffered in varying degree from the "bends" immediately or shortly after arriving at the surface. Before escaping they had to wait while the compartment was filled with water to equalize the pressures outside and inside the vessel. When these pressures were equal, a hatch could be opened outward to allow the men to rise to the surface. Two men escaped after two and one-half hours under this increasing pressure and the rest after three hours. No recompression treatment was performed. When examined twelve years after the accident 3 of the 5 survivors showed bone lesions; the other 2 survivors could not be traced. In 1 of the 3 the bone lesions were much more severe, probably because this man made strenuous efforts to open a stopcock. In radiologic examination all 3 men showed small rounded areas of rarefaction surrounded by a thin shell of hypercalcification in the end of the long bones, confirming the pathology of infarction followed by aseptic necrosis and incomplete repair. In the severe case the heads of both femurs had partially collapsed, resulting in osteoarthritis deformans. The exact cause of infarction is not known.

Influence of Water Supply on Health.—Recent research has emphasized the health aspects of three minerals found in water: calcium, iodine and fluorine. Lack of calcium may interfere with calcification of bones and teeth; lack of iodine may lead to enlargement of the thyroid gland; lack of fluorine may favor the development of dental caries. Murray and Wilson point out that in Britain the Water Act, which received the royal assent on June 15, 1945, will impose on the minister of health for the first time the duty of promoting the provision of a water supply adequate for all reasonable needs of house-

holders. To meet the "reasonable needs of householders for water," as is mentioned in the Water Act, the health and environmental aspects of a water supply should be taken into account. By comparing the water supply conditions in two villages, the authors show that water schemes cannot be planned efficiently on a village basis and that in some districts it may be necessary to employ alternative supplies calculated to give a water of desirable mineral content, or even a mixture from several sources, in order to meet both health and nutritional requirements. Such adjustments in composition will not ensure an adequate supply in every household, because there may be environmental reasons which prevent the proper utilization of the water supplied.

Practitioner, London

155:65-128 (Aug.) 1945

- Rest in Disabilities of Locomotor System. H. Platt.—p. 63.
Congenital Dislocation of Hip. G. Perkins.—p. 70.
Malunion of Fractures. R. Broomhead.—p. 78.
Sciatica as Orthopedic Problem. K. H. Pridie.—p. 84.
Osteoarthritis as Orthopedic Problem. A. M. Hendry.—p. 89.
Carcinoma of Axillary Tail of Breast. D. C. L. Fitzwilliams.—p. 95.
Bites and Stings. C. G. Learoyd.—p. 102.

South African Medical Journal, Cape Town

19:161-180 (May 26) 1945

- *Serologic Diagnosis of Typhus Fever in South Africa. B. Wolstenholme and J. Gear.—p. 162.
*Survival of Transfused Erythrocytes of Stored Blood. A. Altmann and E. F. Watson.—p. 167.
Problems and Treatment of Immersion Blast in Royal Navy. E. P. P. Williams.—p. 169.
Intensive Treatment of Schistosomiasis with Antimony. W. Alves.—p. 171.

Serologic Diagnosis of Typhus.—Wolstenholme and Gear evaluate the serologic tests for the laboratory diagnosis of typhus. They regard the Weil-Felix test as the most reliable and describe the agglutination of the various strains of *Proteus* used in epidemic typhus, murine typhus and tick bite fever. This test does not distinguish between epidemic and murine typhus, and sometimes either of these forms of typhus from tick bite fever. "Bedside" or "field" tests for the diagnosis of typhus are described, and it is noted that under South African conditions the most valuable of these is a modification of the method of Castaneda and Silva. The results have been found to agree very closely with those given by the standard Weil-Felix test. This test also does not differentiate between the various forms of typhus found in South Africa. Such differentiation is possible in most cases by means of the rickettsial complement fixation tests. The rickettsial complement fixation test is a reliable serologic test for the diagnosis of typhus and of tick bite fever. In most cases it is possible by means of this test to distinguish between epidemic typhus and murine typhus, and between these two forms of typhus and the variety of tick bite fever occurring in South Africa. The rickettsial complement fixation is thus a valuable additional serologic test for the diagnosis of typhus.

Survival of Transfused Erythrocytes of Stored Blood.—Altmann and Watson point out that sodium citrate alone as an anticoagulant is not wholly satisfactory in that the survival time of the transfused erythrocytes is shortened. The addition of dextrose prolongs the useful storage period in that survival is satisfactory after storage from fourteen to twenty days, but dextrose cannot be autoclaved with sodium citrate, as it caramelizes at high temperatures in an alkaline medium. A sodium citrate-citric acid-dextrose mixture of pH 4.8 to 5.0 does not show caramelization of the dextrose after autoclaving. Blood stored in this mixture remains suitable for transfusion, as far as the *in vivo* survival of the transfused red cells is concerned, for a period up to twenty-one days. Blood stored for periods up to fifteen days in sodium citrate-citric acid-glucose solution gives *in vivo* survival of the transfused erythrocytes identical to fresh blood. Blood stored for twenty-one days still remains satisfactory, and even blood stored for twenty-eight days can be used with benefit to the patient. Blood should not be stored for more than twenty-one days as a routine. Except for the hemorrhagic states and other clinical conditions which require fresh blood, blood stored by this method can be used in all cases in which transfusion is indicated.

Presse Médicale, Paris

53:161-172 (March 31) 1945

- *Carotid Sinus and Retinal Circulation. Riser, Planques, Couaud and Scigneur.—p. 161.
*Digestive Allergy: Sensitization to a Decomposition Product of Food Protein. P. Blamoutier.—p. 162.
Disregarded Cause of Undulant Fever. P. Lesbre.—p. 162.

Carotid Sinus and Retinal Circulation.—Riser and his associates report observations on 50 subjects in whom they determined simultaneously the retinal arterial tension and the general arterial tension, while performing various manipulations on the carotid sinus, such as digital compression of the sinus region, inhibition of the sinus by procaine hydrochloride and compression of the carotid artery below the sinus. They stress that the variations provoked in the general and the retinal arterial tensions by excitation of the carotid sinus are always synchronous and of the same amplitude. There never appeared a direct action of the sinus on the retinal circulation that could be separated from the action on the general circulation.

Sensitization to Decomposition Product of Food Protein.—Blamoutier points out that, when sensitization takes place by the respiratory route, the cutaneous reactions with the offending substance are nearly always positive. This is not the case in anaphylaxis of digestive origin. A certain protein, such as that of eggs, meat or milk, may elicit an urticarial crisis every time it is ingested and the skin reaction with the substance may nevertheless remain constantly negative. The author together with Pasteur Vallery-Radot had the idea that such subjects are sensitized not to the ingested protein but to a decomposition product of this protein which develops in the course of digestion. He describes studies on a patient aged 34 who for about ten years had had attacks of generalized urticaria with Quincke's edema of the face every time he ate lamb or mutton. The attack appeared five to six hours after the meat had been ingested. All skin tests with lamb or mutton were negative. Even samples incubated with gastric or with duodenal juice produced negative results. However, when specimens of the meat were incubated with both gastric and duodenal juice a positive skin reaction was finally obtained. A Prausnitz-Küstner test with this liquid was likewise positive. The positive outcome of these two tests convinced the author that the patient was sensitized to a product of the digestion of the meat rather than to the meat itself.

Giornale di Medicina, Palermo

2:342-398 (April-May) 1945. Partial Index

- *Nitrogen Determination by the Kjeldahl Method. S. Sorce.—p. 353.
Epinephrine Therapy (Ascoli's) in Pernicious Malaria. F. Scuderi.—p. 362.

Kjeldahl Method for Determination of Nitrogen.—Sorce made simultaneous determinations of the amount of nitrogen in the blood and in the urine of 10 normal adults and 10 diabetic patients by the wet (Kjeldahl) and the dry (Dumas) methods. In both groups the nitrogen values in the urine and in the blood were higher when the dry method was used. In normal persons the differences with the dry method varied between 2.06 and 5.67 per hundred cubic centimeters of urine and between 4.16 and 12.50 per hundred cubic centimeters of blood. In diabetic patients with hyperglycemia and glycosuria and before administration of any therapy the differences of excess were of 2.70 per hundred cubic centimeters of urine and of 37.77 per hundred cubic centimeters of blood. The nitrogen values in the urine and in the blood returned to normal as glycemia was lowered and glycosuria disappeared on correct insulin and diet therapy. Before treatment was begun there was no relation between the degree of hyperglycemia and glycosuria and the nitrogen values in the urine and in the blood. The author points out that in diabetes, especially in severe forms of the disease, nitrogen bodies, which cannot be determined by the Kjeldahl method, increase in the blood up to figures over 30 per cent. The increase is due to metabolic disorders of nitrogen, which are severe in the grave forms of the disease. An expression of the disorder is manifested by azoturia and aminoaciduria, which in many diabetic patients reaches figures twice those of normal urinary excretion of nitrogen.

Book Notices

The History of Surgical Anesthesia. By Thomas E. Keys. With an Introductory Essay by Chauncey D. Leake, and a concluding chapter The Future of Anesthesia by Noel A. Gillespie. Cloth. Price, \$6. Pp. 191, with 43 illustrations. New York: Schuman's, 1945.

The author of this book has become a real authority on the subject of the history of surgical anesthesia. He has been trained as a librarian, and he has learned to make proper evaluation of printed matter. He has written on the subject of the history of anesthesia repeatedly over a period of years, and his work has received the approbation of those who are keenly interested in the subject of medical history. He is therefore most competent to prepare such a book as this one.

The form of the book is one that lends itself to easy understanding because the volume is not too large, it is well printed on good paper and it is thoroughly illustrated and annotated. The purpose of the author was to discuss the subject not from the view of controversy on the point of who should have priority for a given thing but simply to present the facts as they appear in the existing literature. The subject has been covered in a brief but general way so that as many things as possible might be touched on without going into great detail on any one of them.

Presentation of the subject is most satisfactory. The author has made clear in his preface what he planned to do and some of the story of why he did it. He was most fortunate to have obtained an introductory essay by Dr. Chauncey D. Leake, dean of the Medical School of the University of Texas. It indicates very well Dr. Leake's long and keen interest in the subject of anesthesia. The story of anesthesia is then printed and illustrated in pages 3 to 92 and is followed by a bibliography running from pages 93 to 102 that indicates the original sources of material. In the second section, pages 103 to 118, is a chronology of events relating to anesthesiology and allied subjects which is similar to the one that the author prepared for "Clinical Anesthesia." From pages 119 to 125 is the bibliography relating to the chronology table. The third section is presented from pages 126 to 169, and includes a comprehensive bibliography. It could be well called "suggested reading" for those who would like to know in detail the history and progress of the development of anesthesiology. "The Future of Anesthesia" has been prepared by Noel A. Gillespie and runs from pages 170 to 175. It presents his idea of that subject. In an appendix Dr. John F. Fulton has allowed the use of the material at his disposal concerning Morton and some early literature on ether. The index is easy to use and extends from pages 183 to 191.

It would appear that all of the statements in this book are defensible and most of them are documented. There is no doubt that the material is accurate.

There can be no doubt that this is the best and most thorough presentation of the history of surgical anesthesia that has yet been written.

The Bacterial Cell in Its Relation to Problems of Virulence, Immunity and Chemotherapy. By René J. Dubos, George Fabyan Professor of Comparative Pathology and Professor of Tropical Medicine, Schools of Medicine and Public Health, Harvard University, Boston, Mass. With an Addendum by C. F. Robinow. Harvard University Monograph in Medicine and Public Health No. 6. Cloth. Price, \$5. Pp. 460, with 33 illustrations. Cambridge, Mass.: Harvard University Press; London: Oxford University Press, 1945.

Knowledge of cellular immunology has lagged in development behind cellular pathology. Summarizing and integrating presentations in book form of what is known of cellular immunology have been scarce and inadequate. This monograph is a timely and much needed contribution. Dubos has succeeded admirably in blending in organic fashion results of widely scattered biochemical, physical and immunologic studies. An introductory chapter deals with problems, materials and methods. The subjects of cytology of bacteria and their physicochemical and staining properties, cellular structure, variability, virulence, immunization against bacterial infection, and bacteriostatic and bactericidal agents are treated in separate chapters. The concluding chapter, on trends and perspectives, is stimulating in its philosophical vein. Wisely selected quotations at the begin-

ning of each chapter introduce a broad contemplative element and add much to the readability. There is an appendix by Robinow on the nuclear apparatus and cell structure of rod-shaped bacteria. The presentation is lucid, complete and up to date. There are seventy-one pages of bibliography. In the German titles the nouns have not been capitalized. This book is warmly recommended to all interested in bacteriology and immunology.

The New-Born Infant: A Manual of Obstetrical Pediatrics. By Emerson L. Stone, M.D., Associate Clinical Professor of Obstetrics and Gynecology, School of Medicine, Yale University, New Haven, Conn. Third edition. Cloth. Price, \$3.25. Pp. 314. Philadelphia: Lea & Febiger, 1945.

The book, as the author states, has two aims: to correlate and arrange in orderly fashion a mass of data that is otherwise scattered through a vast medical literature and to emphasize at every possible opportunity the obstetrician's point of view and responsibility to sharpen and extend his interest in this important branch of his work. This it does in an unusually interesting manner. The book covers every phase of the newborn period in a clear, simple and accurate manner, discussing methods of prevention, diagnosis and treatment of the many problems of this period. The work is a credit to the obstetrician and stimulates interest in the baby at a time when quick, intelligent care is so important and so frequently neglected. Every obstetrician, general practitioner and pediatrician should have the book.

Proceedings of the Institute on Readjusting with the Returning Servicemen. Held March 8-9, 1945, in The Knickerbocker Hotel, Chicago, Illinois Under the Auspices of the Illinois Society for Mental Hygiene. Paper. Price, \$1.25. Pp. 156. Chicago: The Society, 1945.

This book presents the proceedings of a two day institute held in Chicago in March under the auspices of the Illinois Society for Mental Hygiene. It includes the round table discussions and papers read at the conference. The material essentially relates to the psychologic and psychiatric aspects of problems of readjustment to civilian life, with emphasis on postwar educational and vocational needs and the personal relationships involved in family life. An optimistic note is sounded by some of the speakers in recognizing the benefit of military training and experiences in strengthening many men for orientation of attitudes essential for civilian adjustment. There is also stressed the need for friendliness and expressions of genuine interest to the returning veteran from all those at home with whom he will have dealings. This is a timely book, representative of the thinking and plans of a group of people closely concerned with the readjustment of the veteran.

Secretaría de salubridad y asistencia, memoria 1943-1944, basada en el informe de labores. Presentado al H. ejecutivo de la Unión. Por el Dr. Gustavo Baz, secretario del ramo. Paper. Pp. 420, with illustrations. Mexico, D. F., [n. d.].

This book is based on the report of Dr. Baz to the executive government of Mexico. Dr. Baz is the secretary of the Mexican Secretariat of Sanitation and Assistance, the national department which was created from the fusion of the Secretariat of Public Assistance and the Department of Public Health. The report is concerned with the work on public health, sanitation and public assistance as carried on by the department from Sept. 1, 1943, when it began to function, up to Aug. 31, 1944. The author in the introduction outlines the purpose of the work of the actual government and of his department, which is to care for the Mexican population in all the fields of health, sanitation and education. The book contains several chapters showing (1) the development of hospitals through the country, (2) the better training of technicians in these fields and the international exchange of technicians and (3) a report on work carried on in sanitation, epidemiology, hygiene, nutrition, care of infants and children, vaccination, prevention of tuberculosis and prevention and therapy of venereal diseases and tropical diseases. The functions and work carried on by the various departments of the secretariat in the various states of Mexico are described in detail. The hospitals, polyclinics, crèches and many centers for giving health care to the people are excellent in all respects, as shown by the pictures. The book vividly shows the importance given to public health and public assistance in Mexico by its government.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

ACUTE NEPHRITIS IN CHILD

To the Editor:—A 7 year old girl came down with acute nephritis March 23, 1945 with a nonprotein nitrogen count of over 100, and the urine loaded with red blood cells. Concomitant acute mastoiditis cleared up with penicillin. The urinary findings have improved steadily, so that at present only a plus minus albumin remains. Urine studies are done weekly. Should a change of climate from Pittsburgh be considered for the coming winter? Please name a few general localities in the continental United States where the climate would be of value in prophylaxis against development of chronic nephritis by keeping upper respiratory infections to a minimum.

Captain, M. C., A. U. S.

ANSWER.—It is to be hoped that the child received sufficient penicillin to destroy the infecting organisms completely, for there exists a definite hazard in the possibility of developing resistant strains which then would not yield to penicillin therapy in the future. It is well known that upper respiratory infections are much less frequent in the Southern states and particularly in the Arizona, New Mexico, Colorado area. Chilling, smoke and dusts are predisposing factors to acute respiratory infections; avoidance of these is desirable. Florida, the Gulf Coast or southern Texas is less desirable for a patient such as the one described because of the greater heat and the high atmospheric humidity, which make for excessive perspiration and therefore handicap the repair of the kidneys by depriving them of water needed for diuresis. In this regard it should not be forgotten that it is less work for the kidneys to secrete a larger volume of dilute urine than a small volume of highly concentrated urine. It is sound physiologic therapy to reduce the functional burden of injured structures as much as is feasible. An evaluation of the renal functional capacity with a recheck every six months is desirable. The renal concentration test is probably the most sensitive index of early depreciation in functional reserves. The urea concentration test, though less valuable in the milder instances of renal injury, should be included also, for it yields quantitative results which can be readily contrasted as tests are repeated. Repeated observation of the condition of the blood is important in any patient with nephritis; effective repair of injured tissues cannot be expected if they do not receive adequate oxygen because of an anemia. Even relatively minor degrees of anemia are significant. Such factors are probably more important than climate in the prophylaxis of chronic nephritis.

MYALGIA AND ALTITUDE

To the Editor:—In the New York Post Charles Van Devander in his column "Washington Memo" tells about many of the delegates to the Inter-American conference in Mexico City being ill with what he says is known as mountain sickness for want of a better name. I was particularly interested in one of the symptoms of this illness noted by this writer, namely an ache in the limbs, and I was attracted by his explanation that it is due to the high altitude of Mexico City and the consequent decrease of oxygen content of the air. If this explanation is correct, this so-called mountain sickness would be a concrete illustration to substantiate the thesis that anoxia is one cause for myalgia. If this is so, fliers at high altitudes should experience pain in their limbs. Do people not accustomed to high altitudes suffer muscle pains when suddenly brought into rarefied atmospheres? Is the concept of anoxia as the cause of myalgias at high altitudes correct? Are there references to this problem? If anoxia resulting from decrease in oxygen content of the air may produce myalgias, then cannot anoxia due to other causes, especially disturbances in physiology, cause myalgias in people living at sea level? My interest is mainly with the last query, and it is this which attracted my attention to Van Devander's discussion on mountain sickness. If it is true that high altitudes cause anoxia and that this in turn causes muscle pains, is it proper to reason that muscle pains in people living in low altitudes may also be caused by an anoxia? May anoxia be one explanation for myalgias in these people? Is there positive scientific proof of the latter, assuming, of course, that such a thesis is tenable in the first place?

Harry Weiner, M.D., Brooklyn.

ANSWER.—This inquiry boils down to a search for opinion as to a common cause for the myalgias seen at ordinary altitudes and for aching limbs as described in visitors recently arrived at Mexico City (7,500 feet above sea level). There is abundant literature in standard textbooks of physiology, such as Best and Taylor or Macleod, indexed under mountain sickness. However, the lowest level given for this complaint is 10,000 feet, and among the many symptoms listed aching limbs and pain are not included. For a better consideration of pain

which is more satisfying to the mind than is the usual discourse on myalgia the recent textbook by Sir Thomas Lewis entitled *Pain* (New York, Macmillan Company, 1942) is suggested. There, in a somewhat philosophic discussion of muscle pain, a distinction is made between muscle ischemia, which is regional and may cause pain, and anoxemia, which is general and causes brain and heart symptoms but not myalgia. Fliers at high altitudes do have pain in the limbs. Pain in that instance is caused by lowered barometric pressure and not by anoxia. This fact has been proved in many chamber "flights" by experimental teams and by the air corps in trainees in similar manner. Aviators' bends never occur at 7,500 feet and seldom if ever below 20,000 feet. If myalgia is caused by anoxia the mechanism must be impaired blood flow to the individual muscle and not deficient respiration.

CONTINUED FEVER FOLLOWING SCARLET FEVER

To the Editor:—I should like your opinion as to the necessity of enforcing bed rest for scarlet fever patients after they have apparently made a good recovery except for a fluctuating temperature from 98.6 to 99.6 F. During the past winter I have had several scarlet fever patients who, months after the original condition has cleared, continue to have a slight fever. In none was there involvement of the lymphatics, ears, kidneys or heart, yet their sedimentation rates were about twice the normal rate.

Joseph P. Griffin, M.D., Chesterton, Ind.

ANSWER.—With the mild type of scarlet fever which now generally prevails, enforced bed rest of ten days is sufficient if there are no complications. In some contagious disease hospitals the minimum requirement of enforced bed rest is fourteen days from the onset of the illness. However, it is best to confine patients with elevated temperatures to their beds regardless of the duration of the disease. Often, if there is a rise in the erythrocyte sedimentation rate about the fourteenth day of scarlet fever, it is assumed that some complication is present or will develop. In patients in whom there is not any involvement of the lymphatics, ears, kidneys or heart, a sinusitis should be suspected if the throat, including the tonsils, is negative.

ALOPECIA

To the Editor:—What are the prognosis and effective therapy, if any, for alopecia of the head, eyebrows and eyelashes which has gradually become complete during the past year in a normal 17 year old boy. He has normal distribution of the axillary and pubic hair.

George D. Burns, M.D., Derby, Conn.

ANSWER.—This is undoubtedly a case of alopecia areata, which from the description may go on to that known as alopecia totalis. The prognosis depends chiefly on the amount of hair loss and the age. If the alopecia is partial, the prognosis is, of course, much better and roughly parallels the amount. The youth of the patient tends to make the prognosis more favorable. As far as is known, the distribution of hair dependent on sex has nothing to do with alopecia areata.

There are many forms of treatment. X-rays to the scalp short of producing an erythema are said to be effective; these should be given by an expert, of course, because of the hazard of producing a permanent alopecia due to overdosage. Filtered x-rays may be used to the cervical spinal cord. Ultraviolet ray therapy is one of the most effective methods; it should be used in graduated doses, and some attempt should be made at using stimulating quantities. Recommended agents for local application to the scalp are both numerous and varied, but in general they have irritant properties. One is liquefied phenol, which is quickly neutralized by alcohol as soon as the treated area develops a parboiled appearance. Another popular agent is Cutler's fluid, which consists of equal parts of tincture of iodine, phenol and chloral hydrate. This is applied to all the parts and repeated on the average of once a week, or as soon as the irritation subsides. It is probable that this disease tends to run a course which in most cases is self limited. In the malignant variety the hair continues to fall until a total alopecia results, and this is permanent. In total alopecia the loss of hair may not be total, although some alopecia remains permanently.

MULTIPLE IMMUNIZATION DURING PREGNANCY

To the Editor:—A woman aged 27, due to be delivered in December, plans to fly to a destination outside the country to rejoin her husband. This is the first pregnancy and her condition is excellent. Before her passports will be issued she is required to have all immunization inoculations including that for typhus. Are there any untoward sequelae to be anticipated? Are any special precautions to be observed?

John M. Higgins, M.D., Sayre, Pa.

ANSWER.—No untoward sequelae are to be anticipated from immunization inoculations, including typhus, given during pregnancy. No special precautions need be observed in giving these inoculations.

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PROGNOSIS OF SUBARACHNOID HEMORRHAGE

AND ITS RELATION TO LONG TERM MANAGEMENT

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Following the definition of the syndrome of subarachnoid hemorrhage by Symonds¹ in 1923, its recognition has presented little difficulty. Excellent descriptions of the syndrome and summaries of the literature have been presented by Strauss, Globus and Ginsburg,² Sands³ and Dandy.⁴

Subarachnoid hemorrhage is responsible for 2 per cent of sudden deaths.⁵ It comprises 7 per cent of all cerebral vascular disease and approximates in frequency parenchymatous cerebral hemorrhage (8 per cent).⁶ The most common cause of subarachnoid hemorrhage is rupture of intracranial arterial aneurysms. Among others the studies of Bremer,⁷ Forbus,⁸ McDonald and Korb,⁹ Richardson and Hyland¹⁰ and Magee¹¹ have contributed much to our knowledge of the formation, occurrence and natural history of intracranial arterial aneurysms and their role in the production of subarachnoid hemorrhage. Dandy⁴ has recently reported his pioneer work in the surgical treatment of intracranial arterial aneurysms.

A review of the available information in the literature and the study of additional patients from the New York Hospital has been undertaken with the aim of ascertaining the prognosis and formulating the long term management of patients with subarachnoid hemorrhage.

From the New York Hospital and the Departments of Medicine (Neurology) and Psychiatry, Cornell University Medical College.

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2. Strauss, I.; Globus, J., and Ginsburg, S. W.: Spontaneous Subarachnoid Hemorrhage, *Arch. Neurol. & Psychiat.* 27: 1080 (May) 1932.

3. Sands, I. J.: Diagnosis and Management of Subarachnoid Hemorrhage, *Arch. Neurol. & Psychiat.* 46: 973 (Dec.) 1941.

4. Dandy, W. E.: Intracranial Arterial Aneurysms, Ithaca, N. Y., Comstock Publishing Company, Inc., 1944.

5. Ayer, W. D.: So Called Spontaneous Subarachnoid Hemorrhage, *Am. J. Surg.* 26: 143, 1934.

6. Stevenson, L.: Vascular Diseases of the Brain, in Nelson's New Loose Leaf Medicine, New York, Thomas Nelson & Sons, 1936, chapter 7, p. 215.

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9. McDonald, C. A., and Korb, M.: Intracranial Aneurysms, *Arch. Neurol. & Psychiat.* 42: 298 (Aug.) 1939.

10. Richardson, J. C., and Hyland, H. H.: Intracranial Aneurysms, *Medicine* 20: 1, 1941.

11. Magee, C. G.: Spontaneous Subarachnoid Hemorrhage, *Lancet* 2: 497, 1943.

INCIDENCE ACCORDING TO AGE AND SEX

Forty-six patients at the New York Hospital with subarachnoid hemorrhage are being studied. Postmortem evidence of subarachnoid hemorrhage, operative visualization or xanthochromic cerebrospinal fluid with blood demonstrated by lumbar puncture were the criteria for inclusion. Neonatal and traumatic hemorrhages have not been included.¹²

There were 23 females and 23 males. The age distribution is given in table 1. Age and sex distribution were essentially similar to that reported by McDonald and Korb.⁹

"RECURRENT HEADACHES," "MIGRAINE" AND SUBARACHNOID HEMORRHAGE

Seven (15 per cent) of the New York Hospital patients had definite migraine, and 12 (26 per cent) had periodic, recurrent headaches both unilateral and bilateral, for many years. The incidence of "frequent and severe" headaches of all types in a cross section of the healthy population has been found to be 9 per cent.¹³ Migraine and "recurrent headaches" of many years' standing occur in from 10 to 41 per cent of persons with subarachnoid hemorrhage and aneurysm (Goldflam,¹⁴ Richardson and Hyland,¹⁰ New York Hospital series and Magee¹¹).

Adie¹⁵ and Dunning¹⁶ have postulated the occurrence in the course of migraine of small cranial vascular accidents associated with cerebral infarcts. It is possible that some of the patients considered here are in that category. No further information is available, and the matter has been dealt with extensively elsewhere.¹⁶

PRECIPITATING AND PREDISPOSING FACTORS

The majority of New York Hospital patients were engaged in ordinary activity when rupture took place. Two patients were having sexual intercourse when the attack occurred. Magee¹¹ and Richardson and Hyland¹⁰ have noted excessive activity to be associated with rupture only rarely.

One patient who died had cirrhosis of the liver with bleeding tendency, and 2 patients who lived had syphilis. No premonitory signs which could definitely be considered to precede bleeding were noted.

Five of the New York Hospital patients had elevated blood pressure and at least 3 had definite hypertensive

12. It is to be emphasized that this study is concerned with subarachnoid hemorrhage. Patients with aneurysms detected at operation and autopsy, but not associated with subarachnoid hemorrhage have not been included.

13. Weider, A.; Mittelman, B.; Wechsler, D., and Wolff, H. G.: The Cornell Selectee Index: A Method for Quick Testing of Selectees for the Armed Forces, *J. A. M. A.* 124: 224 (Jan. 22) 1944.

14. Goldflam, S.: Beitrag zur Aetiologie und Symptomatologie der spontanen subarachnoidalen Blutungen, *Deutsche Ztschr. f. Nervenhe.* 76: 158, 1923.

15. Adie, W. J.: Permanent Hemiopia in Migraine and Subarachnoid Hemorrhage, *Lancet* 2: 237, 1930.

16. Dunning, H. S.: Intracranial and Extracranial Vascular Accident, in Migraine, *Arch. Neurol. & Psychiat.* 48: 356 (Sept.) 1942.

vascular disease. Sahs and Keil,¹⁷ Ohler and Hurwitz¹⁸ and Wilson, Rupp and Bartle¹⁹ report similar findings. Only 5 of the 30 patients who recovered had elevated blood pressure.

SYMPTOMS

The symptoms included sudden violent headache, dizziness and vertigo, vomiting, drowsiness, stupor and coma, stiff neck and pain in the back of the thighs and

TABLE 1.—Age Distribution of Forty-Six Patients

Age	Number of Patients
Under 20.....	2
21-30.....	5
31-40.....	8
41-50.....	19
51-60.....	8
61-70.....	3
71-80.....	1

legs, tightness of these areas, sweats and chills. Convulsions occurred in 17 per cent of the New York Hospital patients, in 9 per cent of Richardson and Hyland's¹⁰ and in 12 per cent of Magee's.¹¹ Low back pain was a striking feature in 3 patients, an observation previously reported by Savitsky and Strauss²⁰ and Magee.¹¹

Headache was fronto-occipital, fronto-ocular, fronto-temporal, occipital and sometimes generalized. It was described as a feeling of a sudden snap in the head followed by intense throbbing ache. Sudden onset of an extremely high intensity pain, chiefly in the back of the head, was most common. Not one of these symptoms was of any prognostic value.

SIGNS

The signs were fever, occasionally coming on twenty-four hours or more after the accident and lasting for over a week, stiff neck, Kernig sign, third nerve palsy, delirium, hemiparesis, other evidence of corticospinal tract disease and fundal hemorrhage. (This may be of value in localizing an aneurysm if found in only one eye.⁴ However, in 1 instance [New York Hospital series] a single hemorrhage in one eye was not associated with a demonstrable aneurysm, although subarachnoid hemorrhage was found.) In 2 instances when localizing signs were present an aneurysmal source of bleeding was not found at autopsy. No prognostic information could be gained from the signs. Many of the patients who fully recovered lost consciousness and had convulsions at the onset of the illness.

THE DEMONSTRATION OF CEREBRAL ANEURYSMS

Of the 18 New York Hospital patients with subarachnoid hemorrhages who died, 15 died as a result of subarachnoid hemorrhage, and postmortem examinations were done on 11. These examinations were carefully performed, but no special dissections were made. In 5 of these 11 aneurysms were demonstrated. The remaining 6 patients had subarachnoid hemorrhage with no demonstrable source of bleeding. One of the latter 6 had "cirrhosis of the liver with bleeding tendency." Four of the 5 patients with aneurysm had localizing signs during their illness due to cranial nerve, cerebral or fundal damage. One patient with localizing signs showed no source of bleeding at autopsy, and 3 patients

with localizing signs had negative arteriograms. In addition, aneurysms were surgically visualized in 5 patients with localizing signs and positive arteriograms. In short, in 16 patients with subarachnoid hemorrhage exposure of the cerebral vessels revealed aneurysms in 10.

Ayer⁵ states that autopsies on 14 patients with subarachnoid hemorrhage revealed aneurysms in 14. Magee¹¹ reported 43 instances of aneurysm in 58 post-mortem examinations on his patients with subarachnoid hemorrhage. Ohler and Hurwitz¹⁸ found no aneurysms in 5 postmortem examinations on their patients. Richardson and Hyland¹⁰ reported aneurysms in 27 of 33 autopsies on such patients.

When, in the presence of subarachnoid hemorrhage, localizing signs occur, an aneurysm is more likely to be found, but localizing signs do not make it certain that an aneurysm will be found. On the other hand, in none of the New York Hospital patients with aneurysm (who could be examined) were localizing signs absent.

ARTERIOGRAMS

Ekström and Lindgren²¹ found in 35 postmortem examinations on patients who had received thorotrast for cranial arteriography that 21 had thorotrast emboli in small vessels. In 6 of these cerebral infarction was evident. Peet and List,²² using thorotrast, had no accidents or sequelae after arteriography in a series of 38 patients over a two year period. Moreover, the later use of diodrast has not been associated with obvious complications, although postmortem studies have not been done. Local sensations and vasomotor reactions have occurred but have not been of serious proportions. Nine of the New York Hospital patients had arteriograms, and aneurysm was demonstrated in 5. Thirty-five per cent diodrast was used, and all of the arteriograms were done without mishap.

TABLE 2.—Details of New York Hospital and Magee's Series

	New York Hospital Series		Magee's Series (12)	
	Number	Per Cent	Number	Per Cent
Total number of patients.....	46		150	
Patients who died in first attack.....	5	11	52	35
Patients with recurrent attacks.....	21	52	69	33
Patients who died in recurrent attacks.....	10	22	22	21
Patients surviving without specific treatment.....	31*	67	66	44
Number of Weeks from First Attack to Recurrence	Number of Cases	Number of Deaths	Number of Cases	Number of Deaths
1.....	6	0	4	3
2.....	8	4	0	6
3.....	2	2	12	8
4.....	3	0	7	7
5.....	0	0	4	1
6.....	1	1	4	2
7.....	0	0	3	1
8.....	0	0	0	0
Over 8.....	4	1†	7	5

* One died two years later of a pulmonary infarct. One died within the first year after the initial hemorrhage, of unknown cause. One died three years later of unknown cause.
† Five years after first attack.

PROGNOSIS

Fifteen of the 46 patients of the New York Hospital series died as a direct result of the subarachnoid hemorrhage. One died two years later of a pulmonary infarct, 1 died within the first year of unknown cause, and 1 died three years later of unknown cause.

17. Sahs, A. L., and Keil, P. G.: Subarachnoid Hemorrhage Caused by Ruptured Intracranial Aneurysm, *Am. Heart J.* 26: 645, 1943.
18. Ohler, W. R., and Hurwitz, D.: Spontaneous Subarachnoid Hemorrhage, *J. A. M. A.* 98: 1856 (May 28) 1932.
19. Wilson, G.; Rupp, C., and Bartle, H., Jr.: Ruptured Aneurysms of the Circle of Willis, *Tr. Am. Neurol. A.* 68: 140, 1942.
20. Savitsky, N., and Strauss, I.: Sciatic Pain as Initial Symptom of Subarachnoid Hemorrhage, *New York State J. Med.* 43: 868, 1943.

21. Ekström, G., and Lindgren, G. H.: Gehirnschädigungen nach cerebraler Arteriographie mit Thorotrast, *Zentralbl. f. Neurochir.* 2: 227, 1939.
22. Peet, M. M., and List, C. F.: Arteriography in Intracranial Lesions, *Tr. Am. Neurol. A.* 68: 113, 1942.

If will be seen from table 2 that of the 74 patients in Magee's and the New York Hospital series who had recurrences, 41 had them in the second to fourth week, and, of the 42 patients who died in recurrences, 28 died during this period.

Sequelae occurred in 19 of the 30 surviving New York Hospital patients, but evidence of gross structural neurologic disorder occurred in only 6. Magee¹¹ reports sequelae in 18 of 22 patients followed, but only 3 had evidence of gross structural neurologic disorder. Richardson and Hyland¹⁰ report "severe residual symptoms" in 8 of 37 followed patients. In short, about 20 per cent of patients with subarachnoid hemorrhage exhibit significant sequelae. Sustained, chronic or recurrent headache persisting longer than two months following rupture of intracranial aneurysm with subarachnoid hemorrhage is rare in the New York Hospital patients who did not have headaches before the accident.

The New York Hospital recurrence rate was higher than Magee's,¹¹ and the death rate (39 per cent) was lower than his (50 per cent). The New York Hospital death rate was also lower than that of Ayer's⁵ and of Ohler and Hurwitz's¹⁸ series (50 per cent). This may be explained by the fact that the New York Hospital has no ambulance service, and probably many of the patients who die in the first attack do not reach the hospital. The fact that only 5 of our patients died in the first attack supports this conception. Sahs and Keil¹⁷ reported that 18 of 64 patients (28 per cent) died and 41 of 120 of Sands's³ patients died (34 per cent). At present we cannot help those who die in the first attack but must direct our efforts toward the survivors in preventing death from recurrent attacks of bleeding.

The 196 patients in the series of Magee¹¹ and the New York Hospital may be divided into two groups. The first group comprises those who died in the first six months after the first attack of bleeding. Fifty-seven, or 29 per cent, of the patients died in the first attack and may be waived from further comment because they cannot be helped by present methods. Forty-one, or 21 per cent, may be helped by operative procedures. These patients died in recurrent attacks within one year after the initial hemorrhage. Twenty-eight, or 14 per cent, of the patients died during the second to fourth week after the first bleeding. Five per cent died between the fourth week and the end of the first year. Procedures aimed at helping the patients in the first group must be instituted before or soon after the second week if the 21 per cent who die in recurrent attacks are to be saved. After the fourth week 14 per cent will have already died.

The second group consists of 45 patients who survived the first six months after the first episode of bleeding. This constitutes 23 per cent of the patients. No information is available about the patients who were followed less than six months. The prognosis of this group is difficult to evaluate, because long follow-up facts are not available. Twenty-one of the New York Hospital series were alive at the end of follow-up periods of from six months to nine years, an average of 3.4 years follow-up. One patient died as the result of a pulmonary infarct two years after the first attack. One patient died during a second attack of ruptured aneurysm and subarachnoid hemorrhage five years after the first. One of the New York Hospital patients was alive seven years after the first attack. During this time he had had six recurrences. Another New York Hospital patient was alive and free from sequelae and recurrences

nine years after the first attack.^{22a} Magee¹¹ found 22 of his surviving patients living an average of fourteen months (six months to four years) after the first attack of bleeding (table 3). Richardson and Hyland¹⁰ followed 37 recovered patients an average of four years (six months to ten years) and found that all were alive except 2 who had died from unknown causes. Five of their patients had had nonfatal recurrences. Dandy⁴ reports 2 patients alive twenty-two and fifteen years after hemorrhages. But he found that 2 patients died from recurrences eleven and six years respectively after the first rupture. Jefferson²³ described 3 patients alive six, five and four years respectively after the initial hemorrhage. He also reported that 1 died from a second subarachnoid hemorrhage eighteen years after the first attack. Rosen and Kaufmann²⁴ reported a single patient who died of subarachnoid hemorrhage twenty-seven years after the original attack.

In brief, it would appear that patients who survive the first year have a good chance of relatively long

TABLE 3.—Results of Follow-Up

Period of Follow-Up	New York Hospital, Patients Alive	Magee's Series, Patients Alive
1-6 months.....	6	44
1-12 months.....	5	13
2 years.....	3	5
3 years.....	3	0
4 years.....	4	1
5 years.....	2	0
6 years.....	2	0
7 years.....	1	0
8 years.....	1	0
9 years.....	1	0

survival, but the threat of repeated hemorrhage is always present. Hence, if an aneurysm can be demonstrated in these patients (group 2), surgical intervention is justified.

MANAGEMENT

Suitable recommendations presented elsewhere have dealt with the important topics of pain and headache, restlessness and excitement, nourishment and fluid intake during the period immediately following hemorrhage.³ Discussion here will be focused on long term management gleaned from our growing knowledge of prognosis. From the facts that have been presented it is evident that, if patients with subarachnoid hemorrhage could be treated effectively and safely by surgical procedures in the first two weeks after the hemorrhage, the threat of recurrent hemorrhage and death in approximately 70 per cent of all patients with subarachnoid hemorrhage could be removed.

The surgical treatment of subarachnoid hemorrhage as such has been considered only briefly in the literature. Relevant to this problem, however, are the studies of Dandy⁴ on intracranial aneurysm, as the rupture of these aneurysms is the most common cause of subarachnoid hemorrhage. Dandy reported a 25 per cent mortality in the treatment of intracranial aneurysms by surgery. That is, he did thirty-six operations and obtained twenty "cures" for a variable follow-up period. A review of Dandy's 108 protocols of patients with intracranial cerebral aneurysms reveals information

22a. Since the preparation of the manuscript, another New York Hospital patient was found to be alive and well after having had a subarachnoid hemorrhage twenty years previously.

23. Jefferson, G.: On the Sacular Aneurysms of the Internal Carotid Artery in the Cavernous Sinus, *Brit. J. Surg.* 26: 267, 1938.

24. Rosen, S. R., and Kaufmann, W.: Aneurysm of the Circle of Willis with Symptom-Free Interval of Twenty-Seven Years Between the Initial and Final Rupture, *Arch. Neurol. & Psychiat.* 50: 350 (Sept.) 1943.

pertinent to the problems of this study. Sixty-five of all of Dandy's patients with aneurysm both operated and not operated on had subarachnoid hemorrhage. Twenty of his patients died in the first attack of bleeding without operation. Twenty-two died in recurrent attacks of bleeding without operation. Twenty-three of the patients were operated on at variable times after their hemorrhage and the results were as follows:

Ten patients survived. There were 8 patients "well" at six and one-half, four, three and three-quarters, two and one-half, two, one and one-half years, six weeks and two weeks. One additional patient considered "well" had been operated on in 1942, and the report was published in 1944. Still another patient died of anemia one year after operation.

Thirteen of the patients died after operation, but inspection of their protocols reveals that the operative results are not as ominous as this implies. In 6 patients the aneurysm was exposed and clipped or thrombosed and the patient died within two days, except 1 whose aneurysm ruptured two months after operation at the site of cautery. Four patients were mistakenly operated on for brain tumor, and the aneurysm was not revealed. The patients died shortly after craniotomy. Two patients were so ill at the time of operation that adequate procedures could not be performed. One patient died of pneumonia one month after ligation of the internal carotid. It is noteworthy that in the majority of these patients exploration was done without arteriographic evidence of the location of the aneurysm.

Although the operative procedure is hazardous, with the use of arteriograms to localize the aneurysm, the selection of patients who are good surgical risks and improvement in neurosurgical technic, reduction in mortality rate can be expected.

The situation can be epitomized as follows:

1. If the patient first comes under observation during the first or second week after a first attack of bleeding and has shown no evidence of continued bleeding, there is more than a 20 per cent chance that he will have a recurrence and die of subarachnoid hemorrhage. If arteriograms reveal a definite aneurysm whether localizing signs are present or not, the surgical risk of craniotomy is probably worth while.

2. If the patient first seeks medical attention more than a month after his initial hemorrhage and has significant symptoms referable to a probable aneurysm, arteriograms should be done. The decision concerning craniotomy will then depend on the location of the aneurysm and the nature of the symptoms.

3. If the patient first presents himself more than a month after his first hemorrhage, and he has had no recurrences and no localizing signs or symptoms, there is danger of rupture and death at some time in the future, but this danger is probably not as great as that attendant on craniotomy. In such instances arteriography is optional. If the patient in addition suffers from migraine, the cerebral vasodilatation²⁵ which often accompanies this phenomenon menaces the thin aneurysmal wall, and repeated and protracted insults of this kind may precipitate rupture of the aneurysm when the state of the wall makes this imminent. Therefore, in the long term management of patients with subarachnoid hemorrhage and migraine, if surgery is not feasible, every effort should be made to reduce the number of migraine headache attacks to a minimum.²⁶

The following method of management is therefore recommended:

A patient with a typical history and spinal fluid findings of subarachnoid hemorrhage, who is under the age of 60 and does not have evidence of severe generalized arteriosclerosis, subacute bacterial endocarditis or "bleeding tendency," is to be considered for surgery.

If the patient is alert and cooperative, does not have signs of continued bleeding and is observed during the first to the fourth week after the hemorrhage, arteriograms should be done. When an aneurysm can be visualized, craniotomy should be done if the aneurysm appears to be accessible to the surgeon. Localizing signs should indicate the side on which the arteriograms should be first done. Skull plates should be taken and searched for calcium shadows indicating the site of the lesion. When the arteriograms are negative, the patient should be confined to bed for from four to six weeks after the bleeding has stopped.²⁷

If the patient presents himself for the first time more than four weeks after the first hemorrhage and has persistent neurologic signs of an intracranial mass, arteriograms should be done and surgical operation considered. If the patient has survived without recurrence more than four weeks after the original hemorrhage and has no signs or symptoms, arteriograms and surgical intervention should be considered optional.

CONCLUSIONS

Twenty-nine per cent of patients who enter the hospital with subarachnoid hemorrhage die during the first episode of bleeding; 14 per cent die during recurrent bleeding between the second and the fourth week after the initial hemorrhage, and an additional 5 per cent die by the end of the first year. The majority of the remaining patients who survive the first year are alive three or four years after the initial hemorrhage. However, some die in from one to twenty-seven years of a recurrence of the subarachnoid hemorrhage; others die of some other illness. A few may live twenty-seven years or longer after the first attack without recurrences. Nevertheless, the threat of recurrent hemorrhages and death is always present.

On the basis of these findings it is recommended that patients who come under observation during the four weeks after a subarachnoid hemorrhage be subject to arteriography and subsequent craniotomy if an aneurysm is visualized.

Those who have had their last hemorrhage more than four weeks previously and who have localizing signs of an intracranial mass should have arteriography and subsequent craniotomy if suitable indications exist. When the localizing signs are absent in these patients, arteriography and appropriate surgical intervention are optional pending future development of neurosurgical procedures.

525 East Sixty-Eighth Street.

26. Wolff, H. G.: Migraine, in Barr, D. P.: *Modern Medical Therapy in General Practice*, Baltimore, Williams & Wilkins Company, 1940, p. 2068.

27. Lumbar puncture should be done only for diagnosis. Rarely it may be performed to lower dangerously increased intracranial pressure resulting in deepening coma, depressed respirations and rise in pulse and blood pressure. When lumbar puncture is done for diagnosis, only 1 or 2 cc. of fluid should be slowly withdrawn, and this should be centrifuged to detect xanthochromia. On the rare occasions when it must be done for therapeutic purposes, a number 22 gauge needle should be used. The fluid is allowed to run up the manometer to establish the initial pressure level, and the manometer then tilted so that approximately the original pressure level is maintained. The fluid is allowed to run out of the top of the tilted manometer drop by drop, so that at the end of a half hour the pressure level is approximately half of the original pressure. Such a lumbar puncture is an emergency measure and should certainly not be done routinely at fixed intervals.

25. Graham, J. R., and Wolff, H. G.: Mechanism of Migraine Headache and Action of Ergotamine Tartrate, *Arch. Neurol. & Psychiat.* 39: 757 (April) 1938.

CONGENITAL ANOMALIES FOLLOWING
MATERNAL RUBELLA IN EARLY
WEEKS OF PREGNANCYWITH SPECIAL EMPHASIS ON CONGENITAL
CATARACTC. H. ALBAUGH, M.D.
LOS ANGELES

In 1942 Dr. N. McAlister Gregg¹ of Australia published the first report of congenital anomalies in infants born of mothers who had contracted exanthematous disease in the early weeks of pregnancy. Since then other reports have appeared in increasing number, both in Australia and in this country. In this communication the literature is reviewed and 9 additional cases are reported.

REVIEW OF LITERATURE

Although Gregg's report was carefully reviewed by Reese,² a brief summary of the important facts is included here. In Australia in 1940 there occurred a severe epidemic of rubella, which for the most part affected young persons who had not been exposed in previous epidemics. It is noteworthy that most of those women who were affected during pregnancy were primiparas. The description of the disease was pleomorphic and the diagnosis was often in question because there was a concurrent epidemic of sore throat which had apparently begun in the military establishments and had then spread to the civilian population. Gregg questioned whether, in some instances, the rash might not have been a toxic erythema accompanying the streptococcal infection of the throat.

Of the total of 78 cases reported by Gregg,¹ 13 were from his own practice, 7 he had seen personally with colleagues, and the remaining ones were reported to him by other colleagues.

Incidence of Rubella.—A history of rubella was obtained in all but 10 of the 78 cases. However, in that group of 10 the diagnosis was sufficiently suspected for them to be included.

Cataract.—All of the infants were found to have cataract at birth, bilaterally except in 16, in which there were unilateral lens changes. In all cases the nuclear portion of the lens was most affected, and in many the whole lens seemed to be involved. Absorption of lens material following needling was slower than in the ordinary congenital cataract. It was also noted that these babies were very sensitive to atropine in that they exhibited constitutional symptoms after only small amounts of the drug had been administered. Furthermore, in none of them was good pupillary dilatation obtained. Gregg urged early operation in order that development of the macula and of fixation might result from the stimulus of sight. He pointed out that this type of cataract fails to correspond to any previously described type of congenital cataract. He also made the observation that it is strange that, rubella being as common a disease as it is, there have been no observations of congenital defects in infants ascribed to this cause.

General Observations.—In the series of 78 cases definite congenital heart lesions were reported in 44, and

in many others the diagnosis was uncertain. Patency of the ductus arteriosus was found in 3 cases at autopsy. Nearly all of the babies were underdeveloped and presented feeding problems.

The report of Gregg caused sufficient interest so that, under theegis of the National Health and Medical Research Council of Australia, Swan and his associates³ were commissioned to collect and correlate data on this syndrome. Their report in 1943, covering the period 1939 to 1942 inclusive, concerned itself with 61 infants examined, 36 of which were found to have congenital defects. Forty-nine of the mothers had rubella during pregnancy, and 31 of the offspring exhibited congenital defects.

Of the 31 mothers who subsequently gave birth to children with congenital defects, 29 had contracted rubella within the first three months of pregnancy. All of the 25 mothers who contracted rubella in the first two months had infants with congenital abnormalities, but of the 8 who contracted the disease in the third month of pregnancy only 4 gave birth to congenitally defective offspring.

Eye Defects.—Of the 14 children with eye defects, 13 had cataract and 1 had buphthalmos. All of the mothers had rubella in the first three months, and 12 of those 14 had rubella during the first two months. In 9 of the infants the eye defects were accompanied by heart lesions; 3 were mentally deficient; 1 had talipes equinovarus. Swan and his co-workers³ describe the eye changes as follows (p. 205):

The opacity then had the appearance of a flattened dense white disk in which six radiating lines were visible. These lines were presumed to be the two lens Y's superimposed, giving an appearance like a minute white starfish. If good mydriasis was obtained, a clear zone was visible peripheral to the opacity. The whole lens was very small, however, and at operation tended to move with the needle, so that the edge of the lens and suspensory ligament appeared within the pupillary margin.

Ear Defects.—Seven of the infants in the series with congenital defects were deaf-mutes, 2 of which also had heart lesions.

Cardiac Defects.—Of the 31 cases with congenital abnormalities, 17 had cardiac defects. Of these 8 had cataract, 1 had buphthalmos and 2 were deaf-mutes. Cyanosis was absent in all 17.

Other Defects.—Four of the babies were mentally retarded, 1 had hypospadias and one had talipes equinovarus. The impression was gained that persistent thymus was more common than in normal infants.

Swan and his associates were careful to verify the diagnosis and description of rubella and are reasonably certain that the diagnosis was correct and that this is not a new disease entity.

The most significant conclusion to be drawn from their report³ was that (p. 209):

On the available evidence, when a woman contracts rubella within the first two months of pregnancy it would appear that the chances of her giving birth to a congenitally defective child are in the region of 100 per cent, and if she contracts rubella in the third month they are about 50 per cent.

In 1945 Swan⁴ reported another series of cases. Of 70 offspring of women having rubella during pregnancy, 49 exhibited congenital abnormalities. Twenty of these babies had eye defects. Cataracts were present in 17, of which over half were afflicted with heart dis-

Paper in a symposium on Congenital Disorders Involving the Skin, published under the auspices of the Section on Dermatology and Syphilology.

1. Gregg, N. M.: Congenital Cataract Following German Measles in the Mother, *Tr. Ophth. Soc. Australia* (1941) 2: 35-46, 1942.

2. Reese, A. B.: Congenital Cataracts Following German Measles in the Mother, *Am. J. Ophth.* 27: 483-487 (May) 1944.

3. Swan, C.; Tostevin, A. L.; Moore, R.; Mayo, H., and Black, G. H. B.: Congenital Defects in Infants Following Infectious Diseases During Pregnancy, *M. J. Australia* 2: 201-220 (Sept. 11) 1943.

4. Swan, C., in discussion on Congenital Cataract in Children Following Maternal Rubella, *M. J. Australia* 1: 122 (Feb. 3) 1945.

ease, 1 with buphthalmos, 1 with bilateral central visual defect and 1 with squint; 3 were mentally deficient, and 1 had talipes equinovarus.

Of the 45 with congenital defects, 15 were deaf-mutes, 5 of which had heart disease also. Swan found that heart disease occurred more often in association with cataract than with deaf mutism.

Cardiac abnormalities were present in 26 cases of the series. Seven had heart disease with no other apparent defect, 10 had cataract, 5 deaf-mutism, 1 buphthalmos, 2 mongolism and 1 squint. Swan cited Dr. Mervyn Evans, who had found congenital dental abnormality consisting of retardation of eruption in 23 out of 34 babies whose mothers had rubella during early pregnancy. As Gregg had thrown some doubt on the diagnosis of rubella, Swan and his co-workers were careful in their study of the symptomatology of the reported cases. They were led to the conclusion

1 case morbilli. In the 2 cases in which the exanthem occurred during the second month of pregnancy the infant developed cataract, whereas in those in which the disturbance occurred during the third month congenital glaucoma appeared.

In October 1944 Erickson⁶ reported 11 cases of congenital malformation of the eyes and heart following rubella in the mother in early pregnancy. One of the cases revealed that rubella had been contracted at two and one-half months, the latest of any of them, and in this case cataracts were not present but there were opacification of the cornea and microphthalmia.

In February 1945 two reports were published. Perera⁷ reported 1 case of congenital cataracts following rubella in the mother during the second month of pregnancy. Greenthal⁸ reported 2 cases in which the mother had had a medical diagnosis of rubella during the first two months of pregnancy. One of the babies

Observations in Nine Cases

	1	2	3	4	5	6	7	8	9
Cataract.....	Bilateral	Bilateral	Bilateral	Bilateral	Bilateral	Bilateral	Bilateral	None	Bilateral
Pup.l reaction to light.....	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor
Strabismus.....	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Nystagmoid movement.....	Yes	Yes	No	Yes	No	No	No	No	Yes
Microphthalmia.....	No	Yes	No	Yes	No	No	No	No	No
Glaucoma.....	No	No	No	No	No	No	No	No	Yes
Shallow chamber.....	No	Yes	No	Yes	No	No	No	No	Yes
Operation.....	Needling at 13 mo.	None	Needling at 2 yr.	Needling at 3 and 6 mo.	Suction removal of both eyes	None	Needlings	Optical iridectomy	None
Rate of absorption.....	Normal	.....	Very slow	Very poor	Very rapid	.....	Slow	Rubella	Rubella
Disease in mother.....	Rubella	Rubella	Exposed to morbilli	Rubella	Rubella	Morbilli	Rubella	Rubella	Rubella
Week in pregnancy.....	Third	Fourth	Fourth	Second	Sixth	Eighth	Tenth	Tenth	Eighth
Heart lesions.....	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Cyanosis.....	For 1 mo.	No	Yes, on exertion	One day	No	No	Unknown	No	Yes
Microcephaly.....	Yes	Yes	Uncertain	Yes	Yes	Uncertain	Uncertain	No	Yes
Retarded development.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Feeding problem.....	No	Yes	Unknown	Yes	Yes; pyloric stenosis	Yes	Yes	Yes	Yes
Upper respiratory disease susceptibility...	Yes	No	No	Yes	No	Yes	No	No	Yes
Other abnormalities.....	No	No	No	Umbilical	Undescended testicles Pyloric stenosis	No	No	None	Umbilical hernia
Cause of death.....	.....	.....	.....	.....	.....	Cardiac decompensation Pneumonia	.....	.....	Cardiac failure

Cases 2, 3 and 6 are reported from the Ophthalmological Service of the Children's Hospital, Los Angeles.
Case 5 is reported by courtesy of Dr. Alfred Robbins of Los Angeles.
Case 7 is reported by courtesy of Dr. John P. Lordan of Los Angeles.
Cases 7 and 8 are reported by courtesy of Dr. Robert A. Norene of Los Angeles.
Cases 4 and 9 are from the author's private practice.

that analysis failed to support any other diagnosis than that of rubella. They also noted that in 35 of the 49 mothers who were diagnosed as having rubella the diagnosis was made by medical practitioners of wide experience.

The first report to appear in the American literature was that of A. B. Reese² in May 1944. He reviewed thoroughly the then extant material from Australia and reported another 3 cases of his own. All 3 of the infants he saw were afflicted with congenital cataracts and congenital heart lesions, and all of the mothers had contracted rubella within the first trimester of pregnancy. Reese emphasized the characteristic of shallow chamber; it made him cautious about dilating the pupils for fear of precipitating glaucoma. Again, he raised the important question that if the so-called rubella was true rubella then why had not the relationship between its occurrence and congenital anomalies been recognized before?

A few months later Rones⁵ reported 4 more cases. In 3 of his cases the mother had had rubella and in

suffered deaf-mutism with no other apparent lesion, and the other had a unilateral cataract and a heart lesion as well as mental and physical retardation.

This relationship between maternal rubella and congenital defects in the offspring first entered the national consciousness early in 1945 with the remarks of Dr. P. M. Stimson⁹ of New York, whose discussion of the subject at the New York Academy of Medicine was reviewed (without Dr. Stimson's knowledge) by a *Time* magazine reporter.

REPORT OF CASES

Nine cases of congenital abnormality in the infant following an exanthem in the mother in the early weeks of pregnancy are herewith reported. For the sake of brevity and ready reference these cases are reported in table form. It is suggested that the term rubella be

6. Erickson, C. A.: Rubella Early in Pregnancy Causing Congenital Malformation of Eyes and Heart, *J. Pediat.* **25**: 241-243 (Oct.) 1944.
7. Perera, C. A.: Congenital Cataract Following Rubella in Mother, *Am. J. Ophth.* **28**: 186 (Feb.) 1945.
8. Greenthal, R. M.: Congenital Malformations in the Infant Caused by Rubella Early in Pregnancy, *Arch. Pediat.* **62**: 53-56 (Feb.) 1945.
9. Stimson, P. M.: German Measles Menace, *Time* **15**: 57-58 (March 5) 1945.

used in place of German measles because the public has felt that German measles is a relatively innocuous disease.

COMMENT

Swan¹⁰ has noted that grossly the lens in this condition has the appearance of being smaller than normal, with the densest opacity in the nucleus. He was fortunate enough to examine sections of the lens from autopsy material and discovered that the characteristic picture is that of complete necrosis of the nucleus with more or less distortion of the secondary fibers, depending on the time of the disturbance. He considers that disturbance of secondary fibers indicates that the process, whatever it may be, continues to be evident after the seventh and eighth weeks, since those fibers are not formed until after that time.

All the cardiac defects were related to the septums and the ductus arteriosus. Various degrees of severity of such defects have been observed, from simple patency of the foramen ovale or patency of the ductus arteriosus to large openings between both auricles and ventricles, with patency of the ductus arteriosus. It is known that the critical period for the development of cardiac defects is from the fifth to the eighth week.

As yet no examinations of the internal ear have been reported.

Stages in the development of the human lens are approximately as follows:¹¹

Four mm. stage (third week), lens plate develops.

Five mm. stage, lens pit present.

Seven mm. stage, lens vesicle present but still connected to surface by lens stalk.

Nine mm. stage, lens vesicle separates from surface.

Sixteen mm. stage (sixth week), lens cavity obliterated.

The foregoing data would indicate that the critical period for attack on the lens nucleus would be before the eighth week of pregnancy. This assumption is certainly consistent with the reported statistics on disorder of the lens. Although at the present stage of knowledge any hypothesis would be purely speculative, it would seem likely that either one or both of two processes is responsible for the lenticular lesions. For instance, it is well known that embryonic and undifferentiated tissues are most susceptible to virus invasion. This fact is made use of in the laboratory in that viruses are cultivated on the embryo of the chick. In the human lens, differentiation begins to take place during the eighth week and thereafter progresses rapidly and very likely with reduced vulnerability to virus invasion. The same logic may be applied to susceptibility of the placental barrier. The status of vulnerability to virus infection is about the same for all the other vital organs of the body.

On first consideration it might seem logical to assume that, since the virus of rubella appears to attack the ectodermal structures in the adult, it might do likewise in the embryo. It would be easy, thus, to account for lesions in the lens, as it is an ectodermal structure and at the time of the disease may still have a connection with the surface ectoderm. Such an assumption could not be held so logically when the cardiac lesions

are considered. E. W. Hurst¹² is of the opinion that the lesions are due to faulty nutrition as a result of disturbance in the vascular supply consequent on invasion by the virus or its products.

Several questions have arisen out of the appearance of this new disease association. Some of them might be listed as follows:

Is the disease which affects the mother rubella? Is it rubella in a new form or of increased virulence? Why has this association not been recognized before? Ida Mann¹³ expressed the opinion that the defects were not a new complication of rubella but a previously undetected result of it and possibly of other infections.

Another question that might well be posed, in addition to all the others, is Why do not all the anomalies occur more uniformly in each individual infant? For instance, why should unilateral cataract occur in some children? Why does one have cataracts with heart disease when another has cataracts without any other anomaly? If the disease process continues over a considerable period of time, as Swan suggested, then the timing of the disease should not have such a critical part in the locus of the anomaly.

Rones,⁵ cautious in his opinion, notes that his findings tend to bear out the assertion of Swan that all mothers with exanthematous diseases such as rubella in the first two months of pregnancy will give birth to children with congenital abnormalities. He should be agreed with when he iterates that many thousand cases will be needed for compilation before these findings are accounted as fact rather than as coincidence. He has recommended that a thorough statistical study be carried out by some national agency to establish the validity of present assumptions.

The fact that buphthalmos has been reported as a congenital defect following maternal rubella in the early weeks of pregnancy would tend to bear out the theory of interference with blood supply in the structures at the angle of the anterior chamber. The report of Rones⁵ would indicate that buphthalmos occurs when the exanthem is contracted during the third month. Any necrosis with consequent fibroplastic process would certainly interfere with the later gradual atrophy of material at the anterior chamber angle. Apparently the atrophy mentioned is responsible for the development of the filtration area at the angle. If scar tissue were present, such atrophy could not take place.

In answer to the inquiry why other diseases in early pregnancy are not responsible for the development of similar anomalies in the infant, Swan¹⁰ has postulated that the severe virus infections such as morbilli may kill the fetus and lead to spontaneous abortion, whereas the milder diseases such as rubella cause only damage to the fetus.

Whatever the pathogeny of these congenital abnormalities, it is certain that the suggestions of the Australians that rubella and its causative agent be more carefully studied are to be taken seriously both here and abroad.

In the management of these cases, Gregg¹ stressed the desirability of early operation in order to avoid

10. Swan, C.: A Study of Three Infants Dying from Congenital Defects Following Maternal Rubella in the Early Stages of Pregnancy, *J. Path. & Bact.* 56: 289-295 (July) 1944.

11. Mann, Ida C.: The Development of the Human Eye, London, Cambridge University Press, 1928.

12. Hurst, E. W., cited by Swan, Tostevin, Moore, Mayo and Black.³

13. Mann, Ida C., in discussion on Congenital Cataract in Children Following Maternal Rubella, *M. J. Australia* 1: 123 (Feb. 3) 1945.

the development of nystagmus. In monocular cases operation might well be postponed until the infant is a year old or more, as binocular vision is rarely developed in unilateral aphakia. However, in all cases the time of operation is subject to the general health; many of the infants are feeding problems with poor general health, and many of them have cardiac lesions which make the administration of a general anesthetic risky. Furthermore, at least from the medicolegal aspect, the desirability of x-ray treatment to the thymus before surgery should be considered seriously.

Gregg,¹ and Swan² too, performed needlings in the cataract cases in which they operated. It was found that dissection was difficult because of the small cornea and shallow chamber. It was their opinion that simple needling was ineffective and that break-up of the whole cataract was necessary. In some of the cases reported herewith the same difficulties were experienced. However, Dr. Alfred Robbins¹¹ of Los Angeles used his suction method in 1 of the cases. Recovery was rapid and uneventful and the fundus could be observed immediately after surgery. In this 1 case Dr. Robbins did not feel that the fundus differed materially in appearance from that of a child with the ordinary type of congenital cataract. This is the first reported observation of the fundus in a case with this type of a cataract.

Nearly all of the reports have indicated that dilation of the pupil with atropine was both unsatisfactory and hazardous. As a matter of fact, such is the case in almost any newborn baby because the fibers of the dilator muscle are not completely developed at birth. The fact that constitutional symptoms appeared is not remarkable, because these were underdeveloped babies who might be expected to be less tolerant to ordinary doses. Furthermore the average drop from an ordinary ophthalmic dropper contains approximately $\frac{1}{150}$ grain (0.4 mg.) of atropine when a $\frac{1}{8}$ per cent solution of atropine sulfate is used. Several drops are usually used to dilate the pupils prior to surgery, and it can be seen easily that an unusually large amount of atropine may be absorbed by the infant. Little wonder then that constitutional signs are frequently seen. In the series of cases reported here much more satisfactory results, both as to dilatation of the pupil and absence of constitutional signs, were obtained with 2 per cent neosynephrin. No untoward effects were noted even in those with cardiac lesions.

As yet no report has appeared which attempted to evaluate accurately the visual results of surgery. However, in cases 4, 5 and 7 reported here, in which survival occurred and operation was performed, there is sufficient vision so that these infants are able to orient themselves and to move about by themselves.

As the occurrence of rubella in early pregnancy apparently leads to such crippling consequences in the offspring, it becomes a problem of no little importance from the public health standpoint.

Swan and his associates² suggested two methods of attack: the taking of steps to isolate the causative agent with a view to preparing a protective vaccine, and the use of convalescent serum, which should be studied both for use in the incubation period and as a prophylactic for nonimmune pregnant women. They also

observed that termination of pregnancy had been suggested, but they felt that no legal grounds exist in Australia, at least, and that legislation to such an end might be open to abuse. Erickson⁶ suggested that girls should be exposed deliberately to rubella before maturity and that, particularly during epidemics, women who are in early pregnancy and have not had rubella should be given convalescent serum. Greenthal⁸ is of the opinion that every child should be allowed to contract rubella before maturity in spite of the danger of complications. Both Reese² and Stimson⁹ mentioned the problem of whether women proved to have rubella in early pregnancy should be aborted.

Obviously there is no argument concerning the desirability of making studies on the nature of the causative agent of rubella with a view to the development of a protective vaccine. However, there is room for discussion on the use of convalescent serum. It is evident that in many instances women do not realize that they are pregnant until after the first month and sometimes until much later, so that the prophylactic use of convalescent serum would not always be practicable. Furthermore, except in the large cities where there are communicable disease hospitals or such units in general hospitals, convalescent serum might not be obtained easily.

It is not difficult to agree with Erickson⁶ that all girls should be exposed to rubella before maturity if such exposure can be carried out practically. However, it should be kept in mind that such exposure is not without danger, for complications do occur. Christian¹⁵ mentions encephalitis and purpura and in rare instances albuminuria, arthritis, nephritis, pneumonia and colitis. Owen and Greenaway¹⁶ reported meningo-encephalitis as a complication.

Consideration of abortion of women who have contracted rubella in early pregnancy cannot be lightly entertained. In the first place, legal precedent would have to be established; in most states abortion is now justified only in order to save the life of the mother. Furthermore, as Swan pointed out, specific legislation, if it could ever be passed, might well be open to abuse, particularly because the diagnosis of rubella is not always certain. Too there are deep-rooted religious scruples which present an almost insurmountable barrier to such a procedure.

The attitude of the general public with widespread knowledge of this disease association is worthy of consideration. Dr. Philip M. Stimson¹⁷ of New York is the man most able to report on such an attitude. He wrote "A doctor who was present at my lecture [before the New York Academy of Medicine] told the magazine *Time* what I had said about rubella; hence the account that appeared in the March 5 number and which I did not see until after it was published. As a result of this not altogether desirable publicity I have had a number of letters from all over the country, most of them telling of additional instances of abnormal babies following rubella in the first two months of pregnancy. In 1 case the mother wrote that now she

15. Christian, H. A.: *The Principles and Practice of Medicine*, ed. 15, New York, D. Appleton Century Company, Inc., 1944.

16. Owen, A. B. S., and Greenaway, T. M.: *Meningoencephalitis Complicating German Measles*, M. J. Australia 2: 536 (Nov. 24) 1940.

17. Stimson, P. M.: Personal communication to the author.

14. Robbins, Alfred: Personal communication to the author.

understood why her baby had been afflicted with congenital cataracts and congenital heart disease and general underdevelopment, and she felt she could go on and have more children—something she had not thought she could do, fearing that there was a family taint somewhere. Only one letter—this from a lawyer in Tucson, Ariz.—protested against the statement that abortion would have to be considered very seriously; and a rather remarkable fact is that I have received no letters from anybody saying that they had rubella early in pregnancy and had had a normal baby. In fact, I have yet to hear of an authentic such case."

SUMMARY

Available data would suggest that 100 per cent of the mothers who contract rubella in the first two months, and approximately 50 per cent of those who contract it during the third month, will give birth to infants with congenital anomalies.

The commonest lesions in the infants are cataracts, cardiac septal defects and patent ductus arteriosus, deaf-mutism and microcephaly.

Nearly all of the infants are poorly developed and are feeding problems.

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ABSTRACT OF DISCUSSION

DR. F. W. LYNCH, St. Paul: Dr. Albaugh deserves thanks for calling attention to the now clearly established fact that when rubella occurs during pregnancy it frequently results in one or more congenital anomalies. The prognosis is more severe when the disease occurs as early as the second month. It seems likely that when the disease occurs later the fetus may not be so gravely influenced. Some years ago I reviewed the influence of infectious disease on the fetus (*Arch. Dermat. & Syph.* 26:997 [Dec.] 1932) and found that in the more serious disorder rubella the fetus rarely survived and in 47 cases of fetal smallpox there was a mortality rate of 80 per cent. Congenital abnormality other than the eruption of its scars had not then been recorded. In 9 supposed examples of fetal vaccinal eruptions only 2 infants lived and their disease was acquired in the ninth month of pregnancy. This review also concluded that vaccination in pregnancy, even when early, seldom transmitted immunity to the fetus. Such observations and the evidence cited by Albaugh support a belief that these congenital abnormalities of the eye, heart or nervous system are the effect of disturbance in the vascular supply rather than the direct influence of the virus. This report should spur attempts to develop a protective vaccine or make more generally available the benefits of convalescent serum therapy for rubella. Regarding justification for deliberate previous exposure, the situation is probably comparable and the risks of complication are probably no greater than with vaccination in the case of smallpox. In consideration of "prophylactic" abortion when rubella occurs in early pregnancy there are legal and religious questions and the added moral one of uncertainty as to the natural outcome. It is as yet too soon to accept the statements of some authors that all the children will have congenital abnormalities. In the case of smallpox occurring (later) in pregnancy it was noted that in twin births one fetus might be apparently free from influence while the other had severe disease. Regarding the difficulty of the statistical approach, it was recently noted in the *Lancet* (2:20 [July 7] 1945) that all studies have started from known cases of malformation and that the reverse is not practical because in a mild illness such as rubella many cases will remain unreported or even unrecognized. A paper such as Dr. Albaugh's serves the public health purpose of notifying doctors of the probable outcome of rubella in pregnancy and the need for pregnant women to avoid contact with the disease.

CONGENITAL CATARACTS IN SISTERS WITH CONGENITAL ECTODERMAL DYSPLASIA

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An American dentist, Guilford,¹ first reported a case of congenital ectodermal dysplasia of the anhidrotic type. The man, aged 48, was edentulous and had almost complete absence of taste and complete anosmia. He was hypotrichotic and never perspired. At almost the same time Atkinson² presented before the Philadelphia Medical Society a man aged 40 who had never had teeth or any distinct growth of hair on the scalp except the downy hairs which are seen in early infancy. He was also destitute of the sense of smell and almost of that of taste. His skin appeared to be unprovided with sweat glands, as he never perspired, and when working actively he was obliged to wet his clothes in order to moderate the body heat. He could sleep in these wet clothes in a damp cellar without catching cold. His jaws presented the appearance seen in persons who have lost all their teeth. Hair was present in the axillary and pubic regions, but the downy hair which is usually seen over the skin at large was wanting, except on the scalp. His maternal grandmother and uncle were similarly defective, and the patient was among the younger of twenty-one children. He was a man of very good health, having never been seriously ill, and, although not able to chew his food in the ordinary manner, had never suffered from dyspepsia. The secretion of urine was unusually abundant. He was married and had eight children, among whom were two girls, both of whom lacked a number of teeth.

Since then many more of these cases have been reported, and in 1920 Goeckerman³ reported the first female with the anhidrotic type of congenital ectodermal dysplasia—congenital absence of teeth and sweat glands, hypotrichosis and almost complete absence of sebaceous glands. Furthermore, there is another group of cases with a variety of gradations of the aforementioned symptom complex. These patients may have various parts of the developmental ectoderm involved. Perhaps in one group an almost complete hypotrichosis⁴ will be the main picture; again, the nails may be absent, hypoplastic or grossly deformed. The patient of MacKee and Andrews had satyr ears in addition to the ectodermal dysplasia. Syndactyly⁵ and polydactyly have occurred. There may even be an aplasia or hypoplasia of the pharynx, anomalies of the knee joints and defects of the

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From the Department of Dermatology and Syphilology and the Institute of Pathology of Western Reserve University School of Medicine and from the University Hospitals.

1. Guilford, S. H.: A Dental Anomaly, *Dent. Cosmos* 25:113-118, 1883.

2. Atkinson: Remarkable Case of Defective Development, *Philadelphia M. Times* 13:380 (Feb. 24) 1882-1883.

3. Goeckerman, W. H.: Congenital Ectodermal Defect, *Arch. Dermat. & Syph.* 1:396-412 (April) 1920.

4. Kingsbury, J.: Alopecia Congenita, *J. Cutan. Dis.* 24:419-423 (Sept.) 1906. Oliver, E. A., and Gilbert, N. C.: Congenital Alopecia, *Arch. Dermat. & Syph.* 13:359-373 (March) 1926. Eshner,¹³ Hyde.¹⁴

5. Hyde, James Nevius: Congenital Alopecia as an Expression of Atavism, *J. Cutan. Dis.* 27:1-15 (Jan.) 1909.

clavicles.⁶ In the cases reported by Cole, Driver, Giffen, Norris and Stroud⁷ and by Hailey⁸ there was even the congenital absence of a digit together with striking, systematized, pigmented and vascular changes on the skin of the extremities and other cutaneous changes atrophic in character. Moreover, Cockayne⁹ in his treatise on "Inherited Abnormalities of the Skin and Its Appendages" says that Deutsch reported a case with a cleft hand.

As the title of this paper indicates, ectodermal elements in development are the ones affected, and it might be expected that among other organs the eye might also be involved.



FIG. 1.—Anterior view of the infants, showing the dark reddish pigmented process surrounding apparently atrophic white are with absence of hair. As children became older, the trunk also was involved.

CASE HISTORIES¹⁰

In this paper are presented two sisters having a picture approaching closely the anhidrotic type of congenital ectodermal dysplasia, but perhaps best classified as a combined ectodermal dysplasia, and also having congenital cataracts.

6. Weter, I. P., A Note on Combined Congenital Ectodermal Defects. *Brit. J. Child Dis.* 26: 250-275 (Oct-Dec) 1929. Bartsch, A. Anomalia congenita, kombiniert mit Physikalische und vererbte Anomalie. *Deutsche Zeitschr. f. Clin. Med.* 232: 430-437, 1931.
7. Cole, J. A., D. Hereditary Absence of the Patella and Deformity of the Nail. *Brit. J. Child Dis.* 31: 205-211, 1932. Turner, J. W., An Hereditary Articular Dysplasia Associated with Hereditary Deformity of the Nail. *J. A. M. A.* 100: 882-884 (March 25) 1933.
8. Cole, J. A., Driver, J. P., Giffen, H. K., Norris, C. B., et al. Strabismic, III. Ectodermal Defects. *J. Clin. Med.* 14: 772-778 (Nov.) 1941.
9. Cockayne, H. A., *Hereditary Abnormalities of the Skin and Its Appendages*. Arch. Dermat. & Syph. 44: 345-348 (Sept.) 1941.
10. Hailey, Howard; Howell, H., et al. *Congenital Ectodermal Dysplasia*. Congenital Ectodermal Dysplasia. *Arch. Dermat. & Syph.* 44: 345-348 (Sept.) 1941.
11. Cockayne, H. A., *Inherited Abnormalities of the Skin and Its Appendages*. London, Oxford University Press, 1941.
12. These cases were seen and studied by the senior author, J. A. Cole, M.D., at the University of Chicago, Chicago, Ill.

CASE 1.—History.—M. A., a white girl aged 2 years, first seen in February 1941, had a skin eruption which was first noted when she was very young.

The father, aged 28, is living and well. His incisors are slightly conical and are more widely spaced than usual. The mother, aged 26, is well. There is no known insanity, tuberculosis, congenital heart disease or epilepsy in either side of the family. The paternal great-grandfather and great-grandmother on the grandfather's side were normal and had six boys and four girls, who had normal skin, eyes, hair and teeth.

The maternal great-grandfather and great-grandmother on the grandmother's side were normal and had five boys and four girls. All had normal hair, skin, eyes and teeth.

The paternal grandfather and grandmother had one boy, one girl and a girl from a previous marriage, all of whom were normal. The grandfather is living and well; the grandmother died of influenza in 1918 (The boy is the father of the defective children.) No history of this condition in any of the children of the aunts or uncles is known except that a daughter of one of the father's uncles has a congenital nystagmus with muscle imbalance.

The maternal grandparents are normal and living and well, they have no recollection of any similar condition in any of their relatives. They have five boys with progeny of five boys and two girls, all living, well, and normal; they have four girls—three of the girls having between them one boy and one girl, living and well. The fourth girl is the mother of the defective children.

There are no intermarital connections this far back. No one knows of a similar condition in either family for the three generations of aunts, uncles, cousins, great aunts and great uncles. There is no history of eczema in the family tree.

The parents of the defective children have had two more girls since the birth of the defective children, one is now 6 months and the other 2½ years of age. Thus far both have normal hair, skin and eyes. Teeth are normal in the older child and are unerrupted in the younger baby.

The only other case of congenital abnormality in the family is that in the sister of this patient (case 2).

The general health of this child has been fairly good. She weighed 5 pounds (2,268 Gm.) at birth, and her mental development has been greatly retarded. She talks practically none at all. She had pneumonia at the age of 1 year. She did not walk until she was 22 months of age. The teeth erupted at the usual time. She does not see and has a squint. A cataract was seen in the right eye at the age of 3 months and in the left at 6 months.

Present Illness.—When this child was very young, the mother noted that the skin over the legs was dry and red. The condition progressed to other parts of the body and grew worse. No body sweating has been noted, and in hot weather the child is very fretful.

Physical Examination.—This child (the larger one in figures 1 and 2) is moderately small for her age. She is not expressive and says but one or two words. Skeletal abnormalities are slight, but there is some accentuation of the frontal bosses and the supraorbital ridges, with relative depression of the bridge of the nose. There is moderate exophthalmos and an internal strabismus. The inner epicanthic folds are thickened and webbed over the medial part of both eyes. There are bilateral cataracts. The nasal mucosa is pale and slightly crusted. There are fourteen widely spaced, small teeth, which are hypoplastic and conical, and the enamel is pitted in places. The deciduous teeth are hypoplastic. There is a hypoplasia of the nail.

The most striking abnormalities are found on the skin. On casual observation the skin changes appear as extensive, reddish areas of cutis marmorata. On close inspection the skin of most of the body is mottled with dull, red, confluent, sharply demarcated and mildly elevated areas which fluctuate very slightly with pressure. Between the darker areas are small, pale, yellowish 3 to 10 mm. islands of skin which are more normal in appearance. The changes are most accentuated over the extremities and the face. No hair is visible over the body, but the scalp has a small long, fine, hair-like hairs.

Laboratory Examination.—The urine findings and the blood picture are essentially normal. The Kline diagnostic blood reaction is negative. Blood chemistry studies show sugar 53 mg., calcium 11.3 mg., phosphorus 4.4 mg. and cholesterol 196 mg. per hundred cubic centimeters of blood, and the phosphatase 0.39 unit per hundred cubic centimeters. Further opportunity to study the blood sugar was not offered, since the child was taken home.

Roentgenography reveals undeveloped, unerupted molar teeth in the jaws. No abnormalities are discovered in the bones of the extremities, trunk or calvarium.

Biopsies were taken from the anterior thigh and the abdomen. The findings of this study will be given later, after description of other findings in case 2.

Hospital Course.—The child remained in the hospital for only three days, but during this time the temperature varied from 37.0 to 37.6 C. (98.6 to 99.7 F.). Since she was removed on short notice, no opportunity was presented to make any temperature studies of her body under varying conditions.

CASE 2.—History.—C. A., a white girl aged 10 months, seen in February 1941, at birth also weighed 5 pounds. The delivery was spontaneous and without complication. She has been "cross eyed" since early infancy. Her skin is similar to that of her sister. This change was noted early in life. No mental deficiency was detected at first, but later her mentality was found to be very poor. She developed cataracts in both eyes at about 2 years of age.

Physical Examination.—This infant (the smaller child in figs. 1 and 2) is normally developed and nourished for her age. She has no teeth. The palatal arch is high, but otherwise she shows no abnormalities of the bony framework of the body. The changes about the epicanthic folds and nasal mucosae are similar to those described for her older sister. The nails are rudimentary. The skin changes are similar to those of the older child, but this baby shows a few crusted areas (ecthymas) over the buttocks and legs, with some scaling about the knees.

Laboratory Examination.—The urine and the hemograms are essentially normal. The Kline diagnostic blood reaction is negative. Blood chemistry reveals blood urea nitrogen 19.5 mg., sugar 97 mg., calcium 11.1 mg., phosphorus 5.0 mg., and cholesterol 144 mg. per hundred cubic centimeters. The glucose and adrenal tolerance tests are within normal limits. Roentgenographic studies reveal no osseous or dental abnormalities. Biopsy specimens were removed from the anterior thigh and from the back.

Hospital Course.—When placed within three blankets for about three hours, the child became fretful, lacrimated slightly and showed moderate sweating over the scalp and slight perspiration over the rest of the body. The temperature rose less than 1 degree centigrade. During three weeks in the hospital the temperature varied from 36.0 to 38.2 C. (96.8 to 100.7 F.).

MICROSCOPIC STUDIES¹¹ IN BOTH CASES

Biopsies were taken of skin from the anterior thigh and the abdomen in case 1 and from the anterior thigh and the back in case 2. Serial sections were cut of each specimen. From each of these sites sections were stained for elastic tissue, connective tissue, iron and melanin. The remaining sections from each site were stained with hematoxylin and eosin. In all there were 38 sections from the abdomen and 81 sections from the anterior thigh in the first case. In the second case there were 52 sections from the back and 54 sections from the anterior thigh. Pigment of the stratum germinativum was scanty and often absent. The pigment found in the upper corium and midcorium did not contain iron in any of these sites but showed the reactions for melanin.

CASE 1.—Anterior Thigh.—The epidermis varied considerably in thickness and had a rather thick keratin layer and shallow, sparse rete pegs. The corium was irregular in thickness. It

was in part dense, with abundant collagenous and elastic tissue, but in other regions the subcutaneous fat extended high into the corium. No hair follicles and no sebaceous glands were present in any of the sections. Poorly developed sudoriferous glands were present, but in most places even these were reduced in number or absent. There were occasional oblique, small bundles of smooth muscle in the position and with the shape of the arrector muscles. None of these were well developed. In the upper corium were variable numbers of pleomorphic, usually elongated cells packed with dark, yellowish brown melanin pigment. Most of these pigment cells were close to blood vessels, which appeared in moderate numbers.

Abdomen.—The epidermis varied from 4 to 8 layers in thickness and had a moderately thick keratin layer and irregularly developed rete pegs. Pigment in the basal layers was scanty. The corium was largely dense and thick, but it too contained

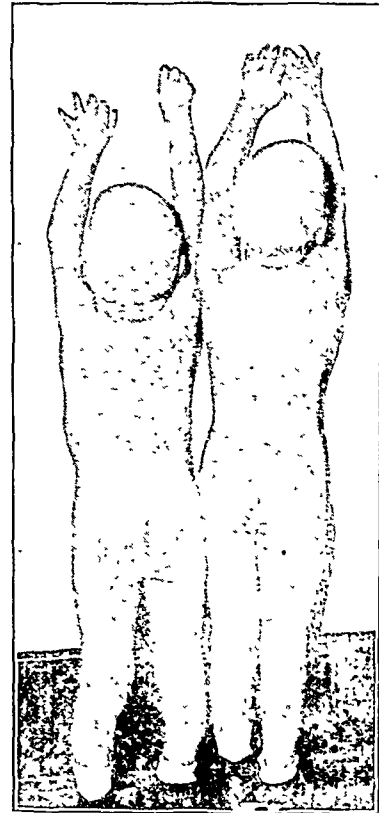


Fig. 2.—Posterior view, children aged 5 and 6, showing the widespread cutaneous change and absence of hair. Note its extensive character over trunk.

some zones of adipose tissue extending from the subcutis high up into the corium. Sweat glands were poorly and irregularly developed. Occasionally there were rudimentary hair follicles and sebaceous glands, but neither of these were fully developed. Foci of melanin pigment were prominent in the upper corium.

CASE 2.—Anterior Thigh.—The epidermis was irregularly thickened and had a moderately thick keratin layer, poorly defined, shallow, rete pegs and little or no pigment in the basal cell zone. In this case too the corium was focally replaced by fat extending from the subcutaneous tissue high up into the corium, while between these areas there were strands of collagenous and elastic tissue. Occasional arrector muscles were found in the upper corium, but there were no hair follicles in any of the sections. The imperfect arrector muscles were without attachment. Moderate numbers of normal sudoriferous glands were present in places deficient in number or absent. Pigment cells were noted in the upper corium.

Back.—Biopsies of the back showed epidermis that varied from normal to slightly increased thickness. There were well

11. Dr. Howard Karsner, professor of pathology and director of the Institute of Pathology, and Dr. Harry Goldblatt, professor of experimental pathology and associate director of the Institute of Pathology, concurred in the microscopic findings and the conclusions drawn from them.

defined rete pegs and moderately cellular papillae of the upper corium, with most of the corium thick and dense. There were moderate numbers of imperfectly formed hair follicles, a few poorly developed sebaceous glands and histologically normal sudoriferous glands. The collagenous connective tissue and the elastic tissue were abundant. Scattered lymphocytes were present around the vasa of the upper corium.

CASE SUMMARIES

With a normal mother and a father with only minor dental defects, two sisters are mentally subnormal and the older one shows evidence of dental hypoplasia. The teeth are present in the other child but as yet are unerupted. Both have atrophic nasal mucosae. Both children stand heat poorly, and the second child experimentally shows a subnormal response to heat with little perspiration. In both children there is almost complete

plasia, and especially for bilateral congenital cataracts and extreme internal strabismus. The term dysplasia is preferred rather than defect. "Dysplasia" is defined as "an abnormality in development." The other ectodermal elements seem to be more frequently involved in this rare malady. And yet, as far back as 1875, Sir Jonathan Hutchinson¹² stated that surgeons were aware of a relationship between congenital cataracts and badly developed teeth. He stated that the cataract was of the lamellar or zonular type, neither the nucleus nor the periphery of the lens being involved. He incorrectly interpreted the condition of the teeth to be secondary to the use of "fit" powders containing mercury, for he had noted the frequency of "fits" in these cases. The 2 patients studied here had no convulsions.

In 1879 Tilbury Fox¹³ described a patient suffering from epidermolysis bullosa hereditaria. This patient had in addition an atrophy of the skin of the forehead, a hypoplasia of the permanent teeth, "weak eyes" and absence of the nails.

Nettleship¹⁴ also has studied lamellar cataracts, fits and hypoplasia of the enamel of the teeth. The fits occur between the ages of 6 and 18 months. Milk teeth are normal, but permanent teeth with the exception of bicuspid lose their enamel and are pitted. Only the crowns of the molars may be affected. He stated that dental changes are present only where large cataracts are found. Consanguinity appears to be rare, except in the group of complete congenital cataracts. He too has fallen into the error of ascribing the tooth condition to mercury given for the convulsions.

Eshner¹⁵ in 1905 reviewed all cases of congenital alopecia up to that date and reported the case of a man aged 64 with an atrichia, a hypoplasia of the nails, perspiring infrequently and having a retinitis albicans.

Hyde in 1909 discussed the subject of congenital alopecia and described a girl aged 3 with a hypoplasia of the hair and nails, a syndactyly and eyes showing opaque patches on the retinas. He also mentions Nicolle and Halpié's¹⁶ report on congenital alopecia in six generations affecting 36 individuals. These patients often had changes of the teeth and nails and impaired sense of taste and smell. Defective perspiration was observed, and "anomalies of the eyes are apparently among the rarest of the phenomena associated with natal and postnatal hair defect."

Schäfer's¹⁷ male patient with an acne-like follicular keratosis on circumscribed areas of the skin also had leukokeratosis of the mucous membrane, scaly areas of the scalp, double cataracts (congenital) and changes on the laryngeal mucous membrane.

Schat¹⁸ saw a patient with defective vision and divergent strabismus, absence of the left upper canines, in one of two sisters with a complete anhidrosis. Being a dentist, he mentioned nothing more specific as to the eye trouble.

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13. Fox, Tilbury. Notes on Unusual or Rare Forms of Skin Disease. IX. Congenital Ulceration of Skin (2 Cases) with Pemphigus Frigens and Arrest of Development Generally. *Lancet* 1: 766-767 (May 31) 1879.

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17. Schäfer, F. Zur Lehre von den congenitalen Dyskeratosen. *Arch. f. Derm. u. Syph.* 145: 425-432, 1925.

18. Schat, W. W. cited by Christ, F. *Schwarz. Abh. teit. f. Zool.* 37: 119, 1927.



Fig. 3—Second child, side view of head. Note cutaneous changes, depressed saddle nose and occasional sparse hair on head.

absence of hair. Both have bilateral congenital cataracts and internal strabismus and were seen by one of the authors (J. T. S.) with regard to them. He reports that they have congenital cataracts which "explode" on rupturing the capsule. Thus far he has operated on three of the four eyes successfully. The squint is the internal, extreme degree type, the right eye being the crossed eye in both children. Ophthalmoscopic view of the retinas and nerve heads appears normal.

Microscopic study of serial sections from two biopsies in each child shows irregular hypoplasia of the skin and accessory structures, sweat glands, sebaceous glands and hairs. In places all three are completely absent, in others rudimentary or present in part, at least sebaceous and coil glands.

COMMENT

The cases described are notable for congenital ectodermal dysplasia approaching the anhidrotic type but probably better classified as a combined ectodermal dys-

Maggs's¹⁹ patient, aged 18, had a hypodontism, microdontism, bilateral microphthalmia and almost complete aniridia.

Christ²⁰ has reviewed the entire subject of congenital ectodermal dysplasias in relation to eye involvement, and the interested reader should refer to this review. He quotes Werner,²¹ who has noted the syndrome of cataract formation (congenital), certain malformations of the fingers, atrophies of the skin and fine curly hair.

Werner quotes Hofstein "that people with anomalies of the hair and certain types of cataract often have a deficient enamelization of the teeth." Our 2 cases are the only ones we have been able to find in the literature in which all the ectodermal elements, teeth, hair, nails, skin, including the sweat and sebaceous glands, the nervous system and the eyes are involved.

Enough has thus far been said to indicate that this remarkable and very rare congenital condition involving these two sisters is inherited. The typical case of major congenital ectodermal dysplasia of the anhidrotic type is considered to be a sex linked recessive (transmitted by the apparently normal female and affecting some of the males). However, there have been reported typical female cases which must be forms of the disease of other causation and which Cockayne would classify as incomplete dominant (abnormality transmitted by direct descent from the affected members of a family to some of their children, who in turn transmit it, and so on. But the normal children do not transmit it, and it does not reappear in their descendants). Nettleship considered his cases of congenital cataracts with hypoplasia of the enamel as an example of simple dominant inheritance—the sexes were equally affected. The type of heredity in these cases is considered to be of an incomplete dominant form.²²

SUMMARY

Two sisters, aged 10 and 22 months respectively, had congenital cataracts of the lamellar type, extreme internal strabismus, hypoplasia of the nails, almost complete alopecia, atrophic nasal mucosae and a generalized hypoplasia of the skin. Both children stand heat poorly, both children are subnormal mentally and the older has a dental hypoplasia. Microscopically there is an irregular hypoplasia of the skin and accessory structures, sweat and sebaceous glands and hair. In places all three are completely absent.

Involvement of all ectodermal elements as seen in these sisters is very rare if not unique, and the picture presented approaches closely to that of congenital ectodermal dysplasia of the anhidrotic type but perhaps would better be classified as a combined ectodermal dysplasia.

The dysplasia of ectodermal elements seen in these sisters with only a suggestive dental abnormality in the father and no other family history is probably "incomplete dominant" in type.

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19. Maggs, W. A., cited by Christ, J.: *Kor.-Bl. f. Zahnärzte* 53:11, 1929.

20. Christ, J.: Ueber die Korrelationen der kongenitalen Defekte des Ektoderms untereinander, mit besonderer Berücksichtigung ihrer Beziehungen zum Auge, *Zentralbl. f. Haut- u. Geschlechtskr.* 40:1-21, 1932.

21. Werner, Sigurd: Erblicher Star und feingelocktes Haar bei mehreren Mitgliedern derselben Familie, *Zentralbl. f. Haut- u. Geschlechtskr.* 31:36, 1929.

22. Siemens, H. W.: Die Vererbung in der Ätiologie der Hautkrankheiten, in Jadassohn, J.: *Handbuch der Haut- und Geschlechtskrankheiten*, Berlin, Julius Springer, 1929, vol. 3, pp. 1-162. Steiner, R.: Angeborene Anomalien der Haut, in Jadassohn, J.: *Handbuch der Haut- und Geschlechtskrankheiten*, Berlin, Julius Springer, 1932, vol. 4, pt. 1, pp. 1-127.

ABSTRACT OF DISCUSSION

DR. EDWARD A. OLIVER, Chicago: Cockayne, in his textbook on inherited abnormalities of the skin and its appendages, gives as the outstanding symptoms of anhidrotic ectodermal dysplasia small size and delicacy of constitution, a total absence or deficient number of teeth, conical incisors and bicusps, and molars with sharp, hooked cusps, short, fine, pale and scanty hair, chronic rhinitis with subsequent loss of the sense of smell, absence of sweating and sometimes, if not always, absence of the lacrimal glands. This report of Dr. Cole and his co-authors is most unusual in that these children, in addition to showing practically all of these symptoms, also show hypoplasia of the nails, a generalized hypoplasia of the skin and, what is still more rare, congenital cataracts. The authors have covered the literature well. Congenital ectodermal defects of a partial character, such as congenital aplasia of the teeth, hypotrichosis and even congenital absence of circumscribed patches of the skin, are no longer rarities. A number of such cases have been reported. These authors' cases are unique in that there is involvement of all ectodermal elements. One of the most interesting features of the majority of these cases is the almost complete absence of sweat glands. By careful microscopic examination the reporters have demonstrated that in these little girls there is an irregular hypoplasia of the sweat and sebaceous structures and in places that all three are completely absent. In practically all of the reported cases of ectodermal defect inability to perspire in warm weather is a prominent symptom, and, while these patients are entirely comfortable in the winter months, they suffer intensely in hot weather. In view of the fact that there was no history of abnormalities on either side of the family, with the exception of a suggestive dental abnormality in the father, the authors are correct in classifying these cases as "incomplete dominant" in type.

DR. GEORGE M. MACKEE, New York: Cole and his collaborators are correct in stating that their patients present an exceedingly rare or even unique variety of combined congenital ectodermal dysplasia, because in these 2 patients all ectodermal elements were involved. Occasionally I encounter minor ectodermal defects and rarely a major case, but I have never seen a patient such as these two sisters. The case reported by Andrews and me was one of major ectodermal dysplasia, but some of the ectodermal elements were normal. In all the congenital ectodermal defects that I have seen, the eyes were either normal or such abnormalities were overlooked. Congenital cataracts or idiopathic cataracts in children, adolescents and young adults, in the absence of other congenital defects, are not uncommon and have been mistaken for x-ray or radium injuries. There are a number of records of congenital cataract occurring in neurodermatitis disseminata, in which also there was mild ichthyosis, especially of the legs.

DR. HAROLD N. COLE, Cleveland: The discussion of Drs. Oliver and MacKee is appreciated. It will be interesting to follow the succeeding siblings in this family and note what occurs. Thus far one girl aged 2½ years and another aged 6 months show nothing.

DR. J. T. SIMMONS, Erie, Pa.: It has now been approximately one and a half years since the cataracts were operated on. With corrective bifocal lenses both children now walk about freely, in contrast to their being content to sit still before. They now have an increased vocabulary and recognize common household articles and toys by name, indicating that the visual apparatus is functioning. The squint has shown no improvement to date.

DR. HORACE K. GIFFEN, Cleveland: Not only the physical defects of ectodermal origin but retarded mental development in these children complete the picture of involvement of the whole embryologic ectoderm which includes the nervous system. Mental changes in such cases reported seem to be as rare as the cataracts found in the eyes. These cases then are unique in the completeness of ectodermal involvement with even slight mesodermal defect as well. There is scanty evidence for hereditary transmission here, but such similarity of findings in sisters together with similar cases reported elsewhere make it probable. Periodically the blame for certain types of anomalies has

been placed on infections in the endometrium of the mother, but the evidence for this is probably inadequate. It would be hard to prove or exclude endometrial chemical changes causing abnormal development. Smith and Gault in their "Essentials of Pathology" indicate that present theories for the cause of anomalies rest chiefly on mechanical factors. The birth of apparently normal children following these 2 reported does not exclude the probability of intrauterine infection, but we have no positive evidence to indicate it. However, it is probable that the damage to the ova must have occurred very early in their development.

DISSEMINATED CONGENITAL OSTEOMAS OF THE SKIN

WITH SUBSEQUENT DEVELOPMENT OF MYOSITIS OSSIFICANS

REPORT OF A CASE IN AN INFANT

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NEW YORK

Osteoma as a congenital abnormality of the skin is not generally known although its development from embryonal cell rests has occasionally been suggested. Our purpose in this paper is to report a case of osteomas occurring in an infant, which is especially rare and may therefore add to the knowledge of the nature of congenital heterotopic bone formations.

Osteoma has been defined as a new growth composed of bone tissue, benign in nature, without any tendency to invasive growth or metastasis. Osteomas have been found in practically all organs as well as in the skin. Osteoma of the skin has been variously reported as "osteosis cutis" by Arzt¹ and Becker,² "osteoma cutis" by Taylor and MacKenna,³ "osteomatosus cutis" by Dietrich,⁴ "miliary osteoma" by Hopkins,⁵ "chondro-osteoma" by Carl⁶ and many other titles. Few of the reported cases can be considered as true or primary osteomas, that is, in which all component parts throughout the tumor consist of bone tissue. Many are secondary ossifications according to Borst,⁷ and may have originated from injuries, inflammatory processes or tumors and the like.

REVIEW OF THE LITERATURE

Osteomas have been mentioned in the earliest literature. They were described as stony, bony substances, calculi or topi, but a more precise differentiation dates to 1858 (Wilkins's⁸ dissertation). Since this publication the literature has been reviewed by Strassberg,⁹

Naegeli,¹⁰ Becker,² Hopkins⁵ and others. No mention is made of osteoma in Cockayne's book of "Inherited Abnormalities of the Skin and Its Appendages" or in Pfandler and Schlossmann's¹¹ "Hautkrankheiten des Kindesalter." In the literature we were unable to find a description of cutaneous osteoma in the newborn. In the frequently cited Keiler¹² case the presence of cutaneous bone formation was not demonstrated. The pathologic findings were interpreted by Simpson as a possible "ichthyosis intrauterina," a form of cutaneous congenital disease. The original clinical description and the colored drawing of this premature newborn infant are more suggestive of a monstrosity or malformation.

Taylor and MacKenna³ observed osteomas in a 15 month old infant, which were first noticed by the mother when the offspring was 5 months of age. A large plaque was present on the knee and smaller ones on the anterior chest wall and on other parts of the body. The pathologic findings were those of bone tissue without any cartilage.

Coleman¹³ described a case of "osteosis" in a 6 year old child which appeared at 3½ years of age and involved one third of the external plantar surface of the left foot.

Heidingsfeld¹⁴ found osteomas in a pigmented hairy nevus on the chin of a 21 year old man which had been present since birth. He considered the association of osteoma with a pigmented nevus, which admittedly is of congenital origin, significant and believed that the osteoma originated from displaced embryonal cells.

Carl⁶ excised a hazelnut-sized, flat, hard tumor from the neck of a 22 year old man. Its presence was first noticed at 2 years of age, grew until the age of 6 and then remained stationary. The microscopic examination showed typical bone structure, cartilage and calcified cartilaginous groundsubstance. He believed that the tumor was a chondro-osteoma which was derived from dispersed embryonal cells with the potentiality of forming chondromatous or osteomatous tissues.

In 1911 Strassberg⁹ published his observations on heterotopic bone formations, based on 6 cases he had studied in his autopsy material at the pathologic institute of Vienna. These seemed to be secondary osteomas, with the exception of 1 case. The first case developed in a laparotomy scar, the second in a varicose complex of the lower leg following hemorrhage and deposit of calcium. In 3 cases bone formation was found in association with a dermoid cyst and epidermoid carcinomas. He thought that in only 1 instance was the development of the osteoma explainable as originating from aberrant embryonal cells. This osteoma was situated in the galea aponeurotica not connected to the periosteum or the skin above. No trauma or other pathologic condition preceded the bone formation and no calcium deposits could be found.

In 1924 Becker² reviewed bone formations and reported a case he observed in a 32 year old woman. He described a large triangular plaque situated in the

Drs. J. P. Caffey, H. L. McLaughlin and A. P. Stout gave cooperation and advice.

From the Department of Dermatology of the Vanderbilt Clinic and the Hughes Hospital, Columbia University College of Physicians and Surgeons.

Papers in a symposium on Congenital Disorders Involving the Skin, published under the auspices of the Section on Dermatology and Syphilology.

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2. Becker, S. W. Osteosis Cutis, *Arch. Derm. & Syph.* **10**: 163 (Aug.), 1924.

3. Taylor, S., and MacKenna, R. W. Osteoma Cutis, *J. Cutan. Dis.* **26**: 449, 1908.

4. Dietrich, C. Osteomatosus Cutis, *Arch. Derm. & Syph.* **41**: 562 (March), 1940.

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6. Carl, W. Ein Chondroosteom der Haut, *Arch. f. Derm. u. Syph.* **100**: 183, 1910.

7. Borst, M., in Aschoff, L. Pathologische Anatomie, Jena, G. Fischer, 1928, vol. 1, p. 728.

8. Wilkins, M. Ueber die Verknöcherung und Verkalkung der Haut, Inaug. Dissert., Göttingen, 1858, cited by Naegeli.¹⁰

9. Strassberg, M. Ueber heterotopische Knochenbildungen der Haut, *Virchows Arch. f. path. Anat.* **203**: 131, 1911.

10. Naegeli, O. Historischer Rückblick ueber Befunde von Verkalkungen in der Haut, heterotopische Knochenbildung und Ossifizierende Tumoren, in *Jahresber. J. Handbuch der Haut und Geschlechtskrankheiten*, Berlin, Julius Springer, 1932, vol. 4, pt. 3, p. 387.

11. Cockayne, E. A. Inherited Abnormalities of the Skin and Its Appendages, London, Oxford University Press, 1933.

12. Becker, J., and others. Die Hautkrankheiten des Kindesalter, in von Pfandler, M., and Schlossmann, A. *Handbuch der Kinderheilkunde*, Leipzig, J. C. W. Vogel, 1935.

13. Keiler, A. Case of Intra Uterine Cutaneous Disease Case of Thickening and Deep Injuries of the Skin in an Infant at Birth, *Monthly J. M. S.* **2**: 694, 1843.

14. Coleman, W. Osteosis of the Skin of the Foot, *J. Cutan. Dis.* **12**: 185, 1894.

15. Heidingsfeld, L. M. Osteoma Cutis, *Arch. f. Derm. u. Syph.* **92**: 337, 1908.

scalp which had persisted for fourteen years. On palpation it was firm, almost calcareous, and was extremely difficult to cut during biopsy.

Hopkins⁵ observed multiple miliary bone nodules on the face and neck which simulated the clinical picture



Fig. 1.—Osteomas of scrotum and perigenital region.

of a mild acne. He thought the small bone tumors developed from embryonal cell rests and were of the nature of bone nevi.

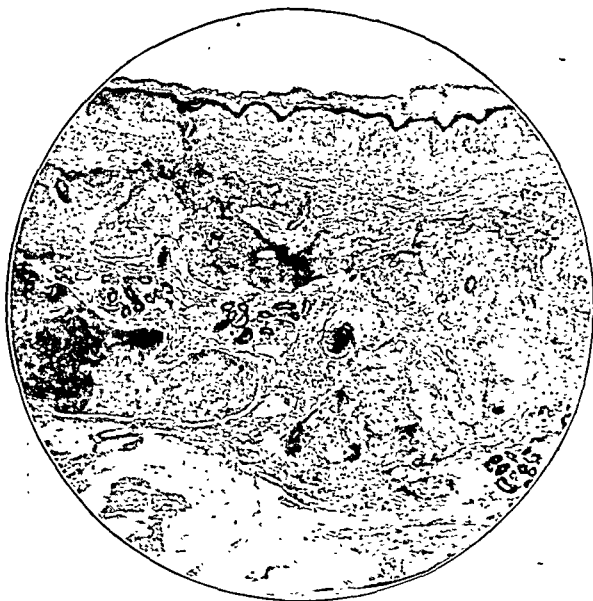


Fig. 2.—Section under low power showing chondro-osteomatous tissue surrounding intact coil glands; note calcified cartilage on left and paler osteoid tissue on right. Hematoxylin and eosin stain.

Musger¹⁶ in his studies of metaplastic bone formations described 6 cases in which bone formations followed various pathologic conditions of the skin. In

16. Musger, A.: Knochenbildungen in der Haut: I. Metaplastische Verknöcherungen, *Acta dermat.-venereol.* 16:1, 1935; II. Nicht-metaplastische Verknöcherungen, *Wien. klin. Wchnschr.* 48:200, 1935.

another publication dealing with true osteomas he reported 2 cases on the basis of the history and histologic findings, although in 1 of these the osseous tissue was found in a "carcinosarcoma."

A very unusual case was described by Dietrich,⁴ in which a 42 year old Negress had a peculiar growth on a finger since early infancy. It measured 1.5 by 1.5 cm. and contained 15 to 20 nodules of bone. It impressed him at first as a sesamoid or supernumerary digit, but after further observation and histologic interpretation of Dr. Weidman, he believed that the tumor-like swelling was a congenital abnormality, possibly a bony nevus.

A recent case of osteoma cutis in a 25 year old man was reported in 1941 by Paavo Pirilä.¹⁷ It was of two years' duration and measured 3.5 by 2 cm., barely rising above the skin surface, and was freely movable over the frontal bone. The microscopic examination showed that the osteoid tissue present resembled that found in embryonal bone formation. Pirilä felt that the findings justified the diagnosis of true osteoma of congenital origin and nevoid in character.



Fig. 3.—Specimen shown in figure 2 under high power.

REPORT OF CASE

History.—C. S., a boy aged 2½ years, was first seen by one of us (F. H. B.) when 19 days old and again at 3½ months. The mother stated that immediately after the baby was born she noticed small, peculiar "bumps" on the left side of the scrotum, on the left leg and on other parts of the body. These were also observed by her obstetrician. The lesions increased in size within the next few weeks with new ones appearing on the body, left lower extremity and back.

The family history was negative. No similar skin disorder was present in the parents and 2 older brothers. The mother enjoyed good health during her pregnancy. She stated that she had not taken calcium, vitamin D or any other drug. Her delivery was normal. The baby's birth weight was 7½ pounds (3,400 Gm.).

Physical Examination.—At 19 days of age the following notes were made: The heart, lungs and abdomen were normal, as were the measurements of the head, chest and height. The skin, however, of the left side of the scrotum, between the scrotum and the left thigh, showed a peculiar lumpy plaque measuring about 1.5 by 2.5 cm. which felt like thrombosed blood vessels. Lymphangioma was the diagnosis made at that time. At 3½ months of age, nodules were felt under the skin of the back, left thigh and ankle regions. The baby was then seen by the senior author.

17. Pirilä, Paavo: Ueber Hautosteoma: Ein Fall von echten Hautosteom, *Acta dermat.-venereol.* 22:360, 1941.

Examination of the skin showed a large number of widely disseminated, solitary and grouped, small papular and nodular lesions and irregularly outlined plaques. They were strikingly numerous in the left genitocrural region, on the lower half of the scrotum and the groin and on the left thigh and lower part of the leg, where they involved both the anterior and

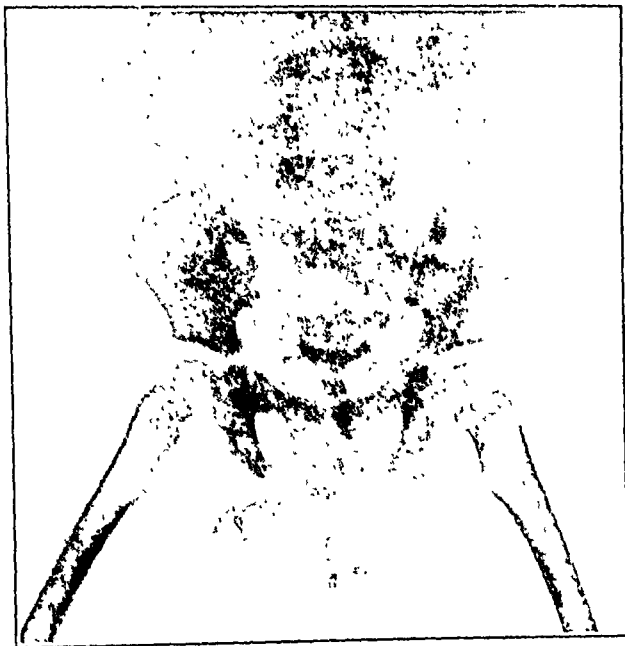


Fig. 4.—Appearance of pelvic region; note opacities in left side of scrotum.

posterior aspects. Numerous lesions were scattered throughout the back, diminishing in number on the trunk and upper extremities.

The individual lesions varied in size from 1 to 5 mm. in diameter, the coalescing plaque on the scrotum measured 1.5 by 2.5 cm., those on the back and left ankle 2 by 3 cm. Their color was variable, ranging from pearly white to a light yellow and from flesh color to a faint red or dull brown. Many of the lesions were distinctly raised above the skin surface 1 to 4 mm. Other lesions were level with the skin surface. The presence of many could be ascertained only through palpation, and in some areas on the back they gave the impression of extending into the deeper layers of the skin. The consistency of the lesions was firm, hard and gritty. The larger plaques were resilient, elastic and after being folded between the fingers resumed their shape instantly. They were firmly attached to the skin but were freely movable over the underlying tissues.

The most unique changes were in the genitocrural region, where a large yellowish white irregular plaque was seen, consisting of closely grouped unequally raised lesions forming furrows and puckerings in the involved skin. This closely simulated the "frog spawn" appearance of lymphangioma. The clinical appearance of the scattered small lesions as to size, shape and color was that of milia. The larger ones simulated cysts, except for their stony hardness (fig. 1). Meanwhile a biopsy was taken, which on microscopic examination proved to be an osteoma.

Course.—The baby was seen again when 11 months old, after spending the winter in the South. His growth and development during this time were normal. The mother thought that many lesions had undergone changes, some having become smaller, others larger. The child was then admitted to the Babies' Hospital for observation and further investigation. At this time there was an apparent involution of the lesions of the left groin, scrotum, thigh and back. The plaques were less raised, and areas previously involved showed evidence of some atrophy. These changes were more pronounced on the trunk

and especially on the abdomen, where a large number of round and oval soft and slightly depressed white and flesh colored, macular atrophic lesions measuring 5 to 10 mm. in diameter could be seen without any evidence of stony nodules. There were similar though smaller atrophic lesions present on the thigh, in the center of which one could detect the presence of deep seated milium cysts but only through palpation and visualization by x-rays. The only other change during the past year and a half was an occasional spontaneous perforation of the skin with extrusion of a small concretum easily removable by forceps. This occurred mainly on the toes, which at these times became reddened, swollen and tender. After the removal of the concretum and application of wet compresses of cold boric acid solution the inflammatory changes subsided, leaving a slight pigmentation.

Microscopic Examination (G. F. M.).—The first biopsy specimen, consisting of two small pieces of skin, was removed from the back on Nov. 5, 1942. The epidermis showed no evident changes. Within the corium of both pieces were fragmented trabeculated bluish masses. Embedded in this calcified tissue were shrunken cells containing pyknotic nuclei. The reticulated pattern of its osseous trabeculae enclosed a loose fibrillar vascular tissue, spindle shaped cellular elements and fat cells. The corium had been replaced in part by bone containing both osteoblasts and marrow. Correlating the histologic morphology with the clinical description, a diagnosis of multiple congenital heterotopic osteomas was made.

On June 10, 1943 a second piece of skin was excised from the left ankle. Numerous preparations were made and examined (figs. 2 and 3). The epidermis showed a slight hyper-



Fig. 5. Disseminated opacities in skin of lower part of left leg.

keratosis. Parts of the corium had been replaced by a cellular fibrous tissue. Numerous osteochondromatous trabeculae had formed. These extended from beneath the epidermis, from which they were separated by collagen down to the fat lobules. The more centrally placed areas of the trabeculae were calcified and enclosed relatively large spaces which contained cells with pyknotic nuclei. The trabeculae were rimmed by an eosinophilic

border, within the substance of which were shrunken cells morphologically osteoblasts. The chondro-osteomatous masses contained several multilocular cysts partly filled with eosinophilic amorphous material. These cysts were walled by a condensation of fibrous connective tissue and in part by numerous spindle and cuboidal cellular elements which resembled osteo-

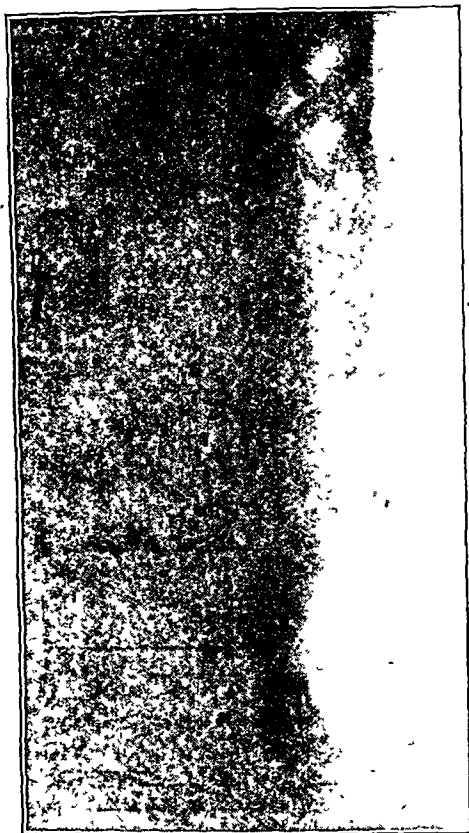


Fig 6.—Grouped cutaneous opacities in left side of back.

blasts. The few multinucleated cells were thought to be osteoclasts. The interstices between the bony trabeculae contained a vascular finely fibrillar connective tissue with fat cells. This was evidently bone marrow. Tiny islands of eosinophilic osteoid tissue such as rimmed the larger cartilagenous elements were in the deeper corium and in the fat lobules. The intracuticular bone appeared to be derived from both cartilage and connective tissue.

Other sections were stained with Masson's trichrome, von Kossa's silver impregnation and Perl's methods. No keratinizing epithelial cells were demonstrated in the walls of the cysts. There was very little evidence of the presence of calcium phosphate; in fact, the hematoxylin eosin stain demonstrated calcium more adequately than the silver impregnation method. The prussian blue reaction was essentially negative throughout the sections. Microscopic examination failed to disclose the presence of blood pigment or hemorrhage.

The lesion was diagnosed as a heterotopic chondro-osteomatous formation with necrosis. Interpreting the histologic morphology, it was assumed that the tumor was composed of young developing osseous tissue.

A third specimen, which consisted of a firm cutaneous extrusion, was obtained on Feb 15, 1945. Microscopic examination of sections disclosed necrotic, partially calcified trabeculated chondro-osseous tissue surrounded by numerous polymorphonuclear leukocytes. A shred of thick keratinized epidermis was attached to the bone. The lesion represented a necrotic heterotopic osteoma.

(All specimens were fixed in solution of formaldehyde U. S. P. diluted 1:10 and except for the first were decalcified.)

A concrement which had been extruded from one of the child's toes was reported as an "exostosis" by another pathologist.

Roentgenograms (figs. 4, 5, 6 and 7) of long bones with special films for soft tissue were examined by Dr. Caffey, who reported that in several areas of the skin, particularly those of the left lower extremity, perineal region and lumbar level of the back, there were scattered shadows of calcium density. These varied from the large plaques on the left side of the scrotum several centimeters in diameter to numerous pinpoint and pinhead calciferous foci in the lower extremity. In all projections where these foci were seen in profile they were superficially placed apparently just under the epidermis. There were no pathologic changes demonstrable in the bones. In anteroposterior and lateral roentgenograms of the skull no pathologic changes were visible. Dr. Caffey felt that these disseminated calciferous lesions in the skin warranted a roentgenologic diagnosis of "calcinosis universalis."

Laboratory Examinations.—Hemoglobin was 12.8 Gm, red blood cells numbered 4,600,000, white blood cells numbered 9,800, with 42 per cent polymorphonuclears, 52 per cent lymphocytes, 4 per cent monocytes and 2 per cent eosinophils. Chemical examination of the blood revealed nonprotein nitrogen 36.3, calcium 11.3 and phosphorus 5. Phosphatase was 89. The Kline test was negative. Tuberculin, 0.01 mg., gave a negative reaction.

DIAGNOSIS

The difficulty in making a clinical diagnosis of osteoma of the skin is admitted by all authors dealing with the subject. The diagnosis is usually established



Fig 7.—Scattered cutaneous opacities in right upper extremity.

only after biopsy and subsequent microscopic examination. A stony, resilient, cartilaginous or calcareous consistency felt on palpation is frequently mentioned as the deciding factor in performing a biopsy. Roentgenograms may be of aid in the diagnosis as they show opaque shadows or structureless densities, thus detecting lesions which escape inspection and palpation.

Osteomas appear in both sexes and when found in the young are usually considered to be true osteomas. The scalp, forehead, cheeks and chin seem to be the more frequent locations, although they may occur on any part of the body. They may be present as solitary or multiple lesions, but a dissemination is infrequent. Their size may be that of a poppyseed or a large bean. Those described as plaques may measure several centimeters in diameter and usually consist of an aggregation of many bony nodules. The color of the lesions is not very characteristic, since they may be flesh colored, pearly, reddish, brown or purplish. Some lesions are raised above the skin surface, others are level with it. They may be round, oval or irregularly contoured but are usually sharply outlined. The surrounding skin is normal. The skin above the lesions may be atrophic or cicatrized. An inflammatory redness occurs, with spontaneous extrusion of bony particles.

Subjective sensation is absent and no tenderness is elicited in the uncomplicated case. Many of the patients seek medical advice only after the lesions have per-



Fig. 8. Lobulated bony tumor of the left buttock.

sisted for years and usually for cosmetic reasons or because of frequent traumatization.

Microscopic studies are indispensable in the diagnosis. This is the only means by which osseous tissue can be identified. In the differential diagnosis consideration must be given to calcinosis cutis and to secondary ossification.

Without exception all authors agree that surgical excision of the osteomas is the only successful therapeutic measure.

COMMENT

Many cases reported in the literature as true osteomas have not been accepted as such. Naegeli¹⁰ accepts only 6 cases as true osteomas of those published up to 1935. The others he considers secondary ossifications.

Secondary ossifications following various pathologic processes of the skin are more frequent and are presumed to be metaplastic. They have been observed occurring in syphilitic and tuberculous granulomas, scleroderma, acne, lupus erythematosus, granulation tissue and scars, especially in those following laparotomies and burns. In this group also belong ossifications, which develop after trauma, hemorrhage, thrombosis and fat necrosis as well as in retention cysts, dermoids and in tumors such as lipomas and carcinomas. None of these ossifications should be regarded as congenital cutaneous anomalies.

The diagnosis of true osteoma may be accepted when it occurs in early life or when found in nevi and when not preceded by other pathologic changes in the skin. Here the microscopic examination may be of aid as far as it discloses the absence of a preceding pathologic condition. From the histologic morphology of the osseous



Fig. 9.—Section of osseous tumor from muscle under low power showing cartilage, bone and marrow.

tissue one cannot draw definite conclusions as to the primary or secondary nature of the osteogenic process.

True or primary osteomas are believed to develop from dispersed embryonal cells. The possibility that osteomas may arise from displaced bone fragments has been mentioned in some of the reported cases. The bone tissue found in some mixed tumors and malformations are probably true osteomas. The theory has been advanced that cutaneous osteomas may be a form of atavism.



Fig. 10.—Specimen shown in figure 9 under high power, with adherent muscle fibers.

The presence of practically all the lesions at birth or soon after in our case indicates that we are dealing with true primary osteomas of the skin. We considered the possibility of some inflammatory or other pathologic process occurring in the skin during intrauterine life which may have preceded the development of the osteomas. Physical, roentgenologic and laboratory exami-

nation, however, did not disclose any systemic or cutaneous disease whatever. Furthermore, many lesions developed after birth and at no time were any other changes observed in the skin. It is obvious that the cutaneous osteogenesis in our case is of congenital nature, and it may be presumed that this resulted from dispersed embryonal osteogenic cells. This view is in accordance with Cohnheim's¹⁸ theory of the endogenous origin of congenital tumors.

Correlating the microscopic morphology of the specimens examined with the clinical manifestations, it may be concluded that the tumors are congenital, disseminated, heterotopic and chondro-osteomatous. As the lesions are circumscribed they are to be considered nevi. The absence of preceding pathologic change indicated their primary character. Clinical observation showed that the tumors had the property of independent growth. Because of the extrusion of bony nodules and the presence of necrotic cystic changes within the osseous tissue of one of the specimens a careful examination for the presence of epithelial cells was made. Secondary ossification frequently occurs in the presence of keratinizing cells and sebum filled cysts. None were present.

Of hemorrhage, which may initiate calcification and ossification, there was no evidence. No extravasated red blood cells and no hemosiderin granules were seen. The tissues were, in fact, poor in demonstrable iron.

The osseous tumors appeared to arise in part from connective tissue elements. This intramembranous type of ossification one would expect to occur within the cutis. The fact is, however, that most of the osseous tissue appeared to be an endochondral bone formation.

In view of these observations, namely that the lesions originated during fetal life and that they were predominantly chondro-osteomatous, it should be remembered that there is a definite progression in the process of fetal ossification. Precartilaginous connective tissue is formed from a condensation of mesenchymal elements which are replaced by hyaline cartilage. The matrix of the cartilage becomes impregnated with calcium salts and is ultimately replaced by osseous or osteoid tissues. This progression is suggested by the histologic morphology of this case.

It would be simpler to explain the bone formation in our case by the more generally held hypothesis that all connective or supportive tissues are closely related and that each type may under certain conditions acquire the potentialities of the others. That is to say that collagenous connective tissue, cartilage, bone and fat are capable of such transformation. Cartilage cells lying within their matrix may contain fat globules. Bone cells grow as fibroblasts and may be transmuted in vitro or in vivo osteoblasts or chondroblasts under appropriate conditions.

As we demonstrated roentgenologically that the tumors bore no intimate relation to the tendons and joints and that in the histologic preparations there was no evidence of xanthomatosis, we rejected their sesamoid bone origin.

SUMMARY AND CONCLUSIONS

In an unusual case of congenital and disseminated osteomas of the skin in an infant the osteomas were seen immediately after birth on the scrotum and the trunk but were most numerous on the left lower extremity.

The osteomas in our case were considered as true or primary congenital tumors of the skin, originating

presumably from the dispersion and displacement of embryonal tissue cells. They are to be regarded as one of the rare developmental abnormalities of the skin: bony nevi.

ADDENDUM

Since this paper went to print C. S., aged 2 years and 11 months, was readmitted to the Babies Hospital on June 8, 1945. A number of the cutaneous nodules had disappeared following extrusion of osseous fragments. Two months before readmission the mother noticed hard masses in the left popliteal region and the left buttock. These were deeply seated and had evidently involved the musculature. Examination disclosed that external rotation and extension of the left thigh were limited because of the mechanical interference of the tumor of the buttock. Although the child's usual activity was in no way impaired, the musculature of the thigh and buttock was diffusely and slightly atrophic and weaker than normal. No brachydactylia or other anatomic anomaly of the hands or feet was present. A roentgenogram revealed "a large irregularly calcified mass visible lateral and posterior to the hip joint" (fig. 8).

At operation the trilobate mass of the buttock proved to be "half again as large as represented by the x-ray shadow." There was no connection between this tumor and the femur; it was, however, adherent to the ischium. This attachment was not direct but only due to soft part connection, in the words of Dr. Harrison L. McLaughlin, the surgeon, "mainly by the origin of the hamstrings." The ossification involved "the external rotators of the hip and hamstring origins" and "probably the adductor minimus. The gluteus maximus was uninvolved." The lateral lobe of the tumor, about the size of a golf ball, was ablated and presented to Dr. A. P. Stout for pathologic examination. He found the specimen to be a "pyramidal piece of bone and cartilage." Dr. Stout's microscopic description follows:

Sections showed that the nodule was made up of well differentiated bone containing marrow and masses of hyaline and fibrocartilage. Along one margin was a little striated muscle. The muscle did not appear to be included within the bony growth. All of the tissues were well differentiated and the foci of most active growth appeared to be signaled by the presence of large groups of capillaries.

This picture is not exactly like the ordinary myositis ossificans, first, because cartilage is formed freely, and, second, because the process of ossification does not seem to enclose within itself isolated muscle fibers. It seems evident that this must be a case of profound disturbance of the bone and cartilage forming mechanism, which had resulted in the formation of bone and cartilage in the skin and in the muscle. The lesion more closely resembles progressive myositis ossificans than any other lesion with which I am acquainted. We will therefore tentatively classify it as such. Diagnosis: Myositis ossificans progressiva.

Rosenstirn,¹⁹ in a case of myositis ossificans progressiva described "two very small spiculae of bone directly in the skin; one on the right arm near insertion of deltoid muscle in outer groove, the other in the popliteal fossa of the right leg." These were excised with the skin, and microscopic examination disclosed the presence of osseous tissue.

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18. Cohnheim, cited by Berst.

19. Rosenstirn, J.: A Contribution to the Study of Myositis Ossificans Progressiva. *Ann. Surg.* 68: 485-520, 591-637, 1918.

ABSTRACT OF DISCUSSION

DR. S. W. BECKER, Chicago: The authors have made an excellent presentation of an interesting and, fortunately, rare dermatosis, which has been designated "osteoma cutis" or "osteosis cutis." When I used the latter term in presenting the case of a woman with a large plaque on the scalp, I did so because the disorder was not considered merely as a neoplasm but rather as replacement, possibly atavistic, of connective tissue by true bone in a considerable area. The designation "osteoma" seems more appropriate for the small globular tumors as reported by Hopkins and others. I recently observed a woman aged 65 who presented tumors on each side of the chin which had been present for many years but had increased in number during the past year. They were firm and superficial, and the smaller ones had the whitish color of milia. When incised, stony resistance was encountered which signified the presence of calcium or bone. Microscopic examination of several masses which were shelled out showed that they consisted of osseous tissue. The location in an area which is often involved in comedones and cysts as part of acne vulgaris suggested preexistence of some such lesion. However, lack of a history of these and the age of the patient made such a sequence of events improbable. The diagnosis of osteoma cutis still rests on microscopic examination, and the only satisfactory treatment is surgical. The disorder is seen so seldom and the case reports are so different that, while the condition may be considered a definite entity, etiologic considerations are still conjectural. When bone formation follows calcification or occurs in tumors, abnormal conditions are apparent and are presumably causative. Whether the same abnormal conditions precede growth of bone in seemingly normal dermis is unknown.

EPIDERMOLYSIS BULLOSA IN
THE NEWBORN

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Bullous syndromes in the newborn are not common except in epidemics of impetigo contagiosa (pemphigus neonatorum). The latter is comparatively easy to diagnose, and the usual therapy is successful. Proper prophylactic measures are immediately instituted once the diagnosis is made. The other bullous entities are rare and at times difficult to diagnose immediately, except in the congenital syphilids. A recent opportunity was afforded to study a case of congenital bullous eruption from birth to death. This was the third baby in the family with a bullous eruption and fatal outcome. A clinical diagnosis of epidermolysis bullosa was finally made. The histologic picture was considered by two dermatologists to be diagnostic of the syndrome and by a third with similarly large experience as a bullous syndrome that was compatible with this diagnosis but not diagnostic of it and possibly fitting in with a congenital ectodermal defect.

REPORT OF CASE

M. F. S., a boy baby weighing 8 pounds 4½ ounces (3,630 Gm.), was born Sept. 16, 1944 with bullae on the dorsal surface of the distal phalanx of each index finger. The hands were distended with clear fluids and had an erythematous

areola. The baby was observed directly after birth because of the history of the mother that the two previous babies had died soon after birth, each having had a blister-like eruption. The parents had been observed three months before the birth of this baby and were found to be normal. Within eighteen hours after birth these bullae collapsed, leaving erythematous



Fig. 1.—Baby's hands eighteen hours after birth.

borders (fig. 1). Small erythematous bullous lesions were now noted on the forehead and eyelids. The baby was given 3,000 units of penicillin intramuscularly every two hours, and a local application of penicillin, 250 units per cubic centimeter, was made to the lesions on the skin. The patient was afebrile at this time.

Artificial feedings were begun on the second day after birth.

Smears of the lesions about the eyes revealed gram positive diplococci, which on cultures were found to be nonhemolytic staphylococci.

The lesions seemed to improve temporarily with the penicillin, but by the fourth day they began to spread over the back in the right scapular region, buttocks, both knees and elbows, and eventually over the whole trunk. Penicillin dressings were discontinued ten days after birth, and 5 per cent sulfathiazole cream was used locally. Penicillin was given intramuscularly every three hours in doses of 1,000 units. Small repeated transfusions of whole blood were also given. Eventually the lesions were very extensive, involving the face, trunk and extremities, and they were then painted with 2 per cent gentian violet.

Approximately one month after birth, paronychia developed with the loss of fingernails and toenails. There was thought to be fairly good response to the gentian violet one week after its institution, the older lesions were drying and there were no new ones noted. A few days later the child began to have difficulty in retaining his formula, and difficulty in breathing was noted. Examination of the throat revealed numerous raised bullous lesions, with several collapsed bullae in the oropharynx. At 40 days of age he had an episode of respiratory



Fig. 2.—General involvement of the skin two months after birth.

obstruction, which was relieved by suction. This was thought to be due to inhalation and plugging by some of the sloughed bullae, as the oral cavity was now involved.

A phytotoxic test revealed 48 units, indicative of a toxic dermatosis possibly in the erythema multiforme group. The Nikolsky sign was negative and remained so. Photographs (fig. 2) of the patient were exhibited at the meeting of the

Paper in a symposium on Congenital Disorders Involving the Skin, published under the auspices of the Section on Dermatology and Syphilology.

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Chicago Dermatological Society on November 15, and a very liberal discussion centered about the four most common possible syndromes, namely congenital epidermolysis bullosa, bullous erythema multiforme, impetigo contagiosa of bullous type and pemphigus vulgaris, and suggestions were offered for therapy.

Repeated small transfusions were again given, with transient improvement. At this time a biopsy was secured of new and old bullous lesions. Histologically there were areas of inflammatory hyperplasia at the sites of erosion. About this time the baby began to develop an intermittent type of fever, varying from 103 to 106 F. with corresponding increases in the pulse and respiratory rates. The course was progressively downward with the development of a subnormal temperature, until seventy-four days after birth.

At birth the blood examination showed 5,520,000 erythrocytes, 16.5 Gm. of hemoglobin and 17,600 leukocytes, with 56 per cent polymorphonuclears, 42 per cent lymphocytes and 2 per cent monocytes. A subsequent examination revealed 4,500,000 erythrocytes with 8,450 leukocytes and a differential distribution of 40 per cent polymorphonuclears, 51 per cent lymphocytes, 4 per cent eosinophils and 5 per cent monocytes. Near death the erythrocytes dropped to 3,850,000, with 10.5 Gm. of hemoglobin, 13,200 leukocytes and a differential count of 48 per cent polymorphonuclears and 52 per cent lymphocytes.

The family history revealed the mother to be 27 years old and apparently perfectly healthy. The father was 30 years of age and well except for a cataract of the left eye. There was no past history of tuberculosis, syphilis, diabetes, cancer, renal disease or blood dyscrasias. The maternal mother died of heart disease at 55 years of age. The mother had given birth to four other children, the first a boy, born July 31, 1935, who died of a ruptured appendix on Feb. 15, 1940; the second, a girl born on Oct. 26, 1936, who died of "congenital pemphigus" on Nov. 26, 1936; the third, a boy, born Aug. 9, 1939, who is living but has a bilateral inguinal hernia; the fourth, a boy born May 1, 1941, who died on May 30, 1941 of apparently the same disease that affected the second child and the patient described in this report.

The mother's puerperium was essentially negative after all these deliveries. She was examined periodically before the birth of this child, but no cutaneous abnormality was found. The father was examined and nothing found of any importance either generally or dermatologically.

An autopsy was performed. The baby was found to have, in addition to the widespread cutaneous eruption consisting of eroded areas and large dried bullae, pulmonary atelectasis and a patent foramen ovale. The body was characterized by dehydration and cachexia.

COMMENT

Davidson¹ recently reported a case of hereditary epidermolysis bullosa and reviewed the literature in great detail. In 1902 Luithlen² gave a comprehensive review of the subject up to that time, together with excellent descriptions of the two generally recognized types of the disease, the simple and the dystrophic. These descriptions may be summarized briefly as follows:

In the simple form the bullae appear on the skin after mechanical irritation or slight trauma. The disease is usually congenital; the lesions may be present at birth or may appear first from a few days to two or three years after birth. The mucous membranes are not affected, and the nails are not involved. The blebs heal without leaving scars, and there is no permanent alteration in the skin. The general health of the patient remains unaffected, although the disease may persist indefinitely. In some cases the tendency toward the formation of bullae ceases at a later age, often at puberty.

In the dystrophic form the hereditary nature of the disease is present but is not as pronounced as in the simple form. The condition usually persists through life. The bullae appear at or soon after birth, as in the first form, and arise after trauma. They are most apt to become hemorrhagic. In healing crusts and scabs are formed, resulting in permanent pigmentation and scarring. Occasionally, deep ulcerations occur, but usually the skin shows atrophy, wrinkling or an ectodermic condition. The skin may be thickened and crusted, especially over the knees and elbows. Thickening may be due also to horny cysts embedded in the skin. These resemble milia and either are scattered over the surface or appear in circumscribed groups. The cysts may disappear spontaneously after several weeks, or they may persist indefinitely. Itching may precede the formation of bullae or may be absent. Extensive degeneration of the nails is a constant characteristic of this type. The nails may be absent at birth or be shed soon afterward. When present they are always thickened and deformed, lamellated and without luster. The buccal mucosa and the tongue show bullae, ulceration and leukoplakia, and there may be scarring of the lips. The tongue may be atrophic.

The observation of different investigators on the pathogenesis of hereditary epidermolysis bullosa shows considerable variation and contradiction. That there are a more or less constant reduction and degeneration of the elastic tissue of the skin is pretty well agreed. Practically all investigators believe that the bullae may be ascribed to a modified susceptibility or reactivity of the skin to injury, to an increased irritability of the integument which under normal conditions would result only in transient hyperemia. Some observers (Elliot,³ Unna,⁴ Torok⁵) express the opinion that there is a congenital irritability of the vascular system of the skin, with the result that the basal portion of the rete is bathed in a serous transudate, undergoes degenerative changes and finally becomes detached from the connective tissue. Others, particularly Engman and Mook, ascribed the formation of bullae to congenital absence of or defect in the elastic tissue of the papillary and subpapillary layers of the skin, with edema of the succulent horny layer and colliquation of many cells in the basal layers of the epidermis. These authors regarded the absence of elastic tissue as a primary phenomenon, while Beck and others believed that the disappearance of elastic tissue results from degeneration, which in turn is provoked by persistent edema of the upper part of the corium.

Finally in 1934, in a long and detailed paper, Herlitz⁶ described a new, so-called lethal form of the disease which he termed "epidermolysis bullosa hereditaria letalis." He recognized the two main types previously described, i. e. the simple and the dystrophic form. Out of an extensive review of the literature, which was complicated by absence of uniform terminology and of strict criteria for diagnosis, Herlitz brought together 22 cases of the new forms: 8 of his own, 3 of Mautner's,⁷

3. Elliot, G. T.: A Further Contribution to the Histopathology of Epidermolysis Bullosa (Hereditaria), New York M. J. 71: 585 and 625, 1900.

4. Unna, P. G.: Ueber die Duhringsche Krankheit und eine neue Form derselben, Dermat. Wehnschr. 10: 97, 1889.

5. Torok, L.: Epidermolysis hereditaria bullosa (Kocbner), Arch. f. Dermat. u. Syph. 47: 402, 1899.

6. Herlitz, J.: Kongenitale nicht syphilitische Pemphigus: Eine Uebersicht nebst Beschreibung einer neuen Krankheitsform (Epidermolysis bullosa hereditaria letalis), Acta paediat. 17: 315, 1935.

7. Mautner, H.: Ueber ein familiär aufretendes, letales Krankheitsbild mit Blasenbildung (Pemphigus hereditarius), Monatsschr. f. Kinderh. 22: 15, 1922.

1. Davidson, L. T.: Hereditary Epidermolysis Bullosa, Am. J. Dis. Child. 59: 371 (Feb.) 1940.

2. Luithlen, F.: Epidermolysis bullosa hereditaria, in Mrazek, T.: Handbuch der Hautkrankheiten, Vienna, Alfred Holder, 1902, vol. 1, p. 738.

2 of Kuse's,⁸ 7 of Jenny's⁹ and 2 of Heinrichsbauer's.¹⁰ The condition in the cases of this group differs from the classic, simple and dystrophic form in that it always leads to early death, which usually occurs before the third month. In no case was the duration longer than seven and one-half months. Herlitz's 8 cases occurred in three families, 4 in one and 2 in each of the others. In no instance had there been a previous case in any of the families, all of which came from the province of Uppland in Sweden and whose records went back to the beginning of the eighteenth century. The presence of extensive congenital cutaneous structures, especially the tendons and blood vessels, were readily visible through the transparent tissue. The Nikolsky phenomenon (rubbing off of the skin in the bath) was present but it was not possible to produce vesication by deliberate trauma, such as rubbing, pinching or bandaging. There were pronounced dystrophy and deformity of the nails, some of which were absent at birth or fell off soon afterward. In some cases these lesions progressed to involve severe skeletal atrophy of the terminal phalanges. Histologically there was degeneration of elastic tissue, the skin was thinner than normal and the sweat glands and hair follicles were rudimentary. The author differentiated this condition from congenital syphilis and from congenital pemphigus neonatorum.

The case here reported seems definitely to belong to the small group described by Herlitz,⁶ which he called epidermolysis bullosa hereditaria letalis. The congenital cutaneous bullae on the two fingers at birth are typical of this disease. The subsequent involvement of the whole integument and the mucous membrane of the mouth, tongue and pharynx, the rapid and widespread formation of bullae, with secondary infection and constitutional debilitation resulting in early death, are characteristic of the so-called lethal form of hereditary epidermolysis bullosa.

SUMMARY

Bullous eruptions in the newborn (save for impetigo contagiosa) are uncommon. Epidermolysis bullosa can occur and, in the lethal form, bullae arise irrespective of trauma or irritation. The eruption is progressive and soon is fatal, irrespective of therapy.

ABSTRACT OF DISCUSSION

DR. RUBEN NOMLAND, Iowa City: Several years ago I had the opportunity of observing a case almost identical with that of the authors and I believed it to be the lethal form of epidermolysis bullosa. The skin of a newborn baby slipped off in large areas during delivery. Subsequently many spontaneous blisters formed and the infant died. Postmortem examination revealed nothing of significance except for the skin, in which the epidermis was separated from the dermis. In the newest blisters the papillae at the floor of the blister projected into the blister cavity and the corresponding rete pegs projected downward. This would indicate that the essential pathologic condition was that of lack of cohesion between the dermis and epidermis. I do not believe that the loss of elastic tissue is the most important factor in this separation. First, blisters do not occur in those diseases in which there is loss of elastic tissue, the best examples being idiopathic atrophy and the various forms of scleroderma. Second, personal examination of several cases of epidermolysis bullosa, particularly with connective tissue

sue stains such as Van Gieson's, has shown that in this disorder the collagen fibers are less firmly attached to the basal cells and rete pegs than in normal skin. The lack of cohesion between the dermis and the epidermis in epidermolysis bullosa is seemingly connected with loss of elastic tissue, abnormal connections between the connective tissue of the dermis and the basal cells, and probably other abnormalities not yet recognized.

THE TREATMENT OF EXTERNAL HERNIAS CONTAINING GANGRENOUS BOWEL

NEW METHOD UTILIZING THE MILLER-
ABBOTT TUBE

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Dr. Emory G. Alexander¹ in 1913 in a paper on strangulated hernia wrote "It is strange that in the past two decades of progressive surgery, an era unparalleled by great strides made in the art of diagnosis, operative technic and after-treatment—to say nothing of the help obtained by educating the public to surgical conditions—little has been done either directly or indirectly to lower the death rate of this condition." The results of the treatment of strangulated hernia are no better in 1945 than in 1913. A review of reports on strangulated hernia, published since 1913, shows that the results of treating this condition are as poor now as they were then; in fact, the death rate is about as high today as it was in the days of preaseptic surgery.

Many ingenious methods have been proposed for the cure of patients having gangrenous bowel in external hernias. The accompanying diagrams illustrate all these of which we have been able to find descriptions.

These methods have serious drawbacks. Several of them make necessary division of Poupart's ligament in order to reduce gangrenous, friable intestine. The permanent disability which this may cause has been passed off too lightly in the literature. Some of them make necessary the anastomosing of collapsed bowel to distended and obstructed bowel in a patient in poor general condition because of dehydration, starvation and bowel distention. The methods which require an enterostomy of some kind are unsatisfactory and dangerous. Introduction of an enterostomy tube through the femoral canal by way of the lumen of the gangrenous bowel is dangerous, and it may dislodge the gangrenous bowel or perforate it. It may enter the bowel distal to the obstruction. It may not relieve the obstruction even when it enters the distended bowel, because bowel which has been distended for a long time will not recover its power to contract short of five or six days.²

The tube will therefore drain only the loop of distended bowel immediately proximal to the hernia. All of these methods are unsatisfactory because they are followed by death in too many cases.

The senior author in 1942, called to treat a healthy, obese woman of 68 for a femoral hernia, strangulated for five days, thought of the plan of treatment described in this paper. This plan, briefly, consists of three parts:

1. Incision of the hernial sac together with the gangrenous bowel within it.

8. Kuse, K. H.: Ein Beitrag zum Krankheitsbild des Pemphigus hereditarius, Monatschr. f. Kinderh. 42: 513, 1929.
9. Jenny, E.: Ueber eine letal verlaufende Form von Epidermolysis bullosa hereditaria beim Saugling, Ztschr. f. Kinderh. 43: 138, 1927.
10. Heinrichsbauer, F.: Ein weiterer Beitrag zur Frage angeborener Hautdefekte (ueber ein familiares letales Krankheitsbild mit Blasenbildung und angeborenen Defekten der Haut), Arch. f. Gynäk. 134: 673, 1928.

1. Alexander, E. G.: Strangulated Hernia: Report of 105 Cases, Ann. Surg. 58: 639, 1913.

2. Battersby, J. S., and Gatch, W. D.: Two Stages of Bowel Distention, Arch. Surg. 44: 108 (Jan.) 1942.

2. Deflation of the obstructed bowel down to the point where it is obstructed at the hernial ring with a Miller-Abbott tube. This restores it to a healthy condition and permits giving the patient liquids and soft foods by mouth, thus correcting starvation and dehydration.

3. Laparotomy done after the tube has been down for about a week through a low, paramedian incision; excision of the gangrenous bowel, and intestinal anastomosis; plugging of the femoral ring with omentum stitched to it; treatment of the abdominal wound with sulfathiazole after closure of the peritoneum.

possible objection is that it may be impossible to pass the Miller-Abbott tube. We have not had any difficulty doing this because of the skilful help of our roentgenologists, who have had but six failures to pass the tube in over 100 unselected cases of bowel obstruction.

REPORT OF CASES

CASE 1.—*History*.—Mrs. R. B. S., aged 68, was admitted to Robert Long Hospital on Nov. 4, 1942 because of the appearance, three days before admission, of a mass in the right groin.

Methods and Results of Treating External Hernias Containing Gangrenous Bowel

Subject	Author	Year	Cases	Deaths	Mortality, Per Cent
.....	Henggeler	1891-1894	12 resections or sutures	8	66
.....	Bundeschuh	1890-1891	14 enterostomies	10	71
.....	Statistics of Henggeler and Bundeschuh reported by von Gabathuler, A.: Schweiz. med. Wchenschr. 59: 835, 1929		24 resections	8	33
Radical cure of femoral hernia.....	Coley, W. B.: Tr. Am. S. A. 24: 402, 1906.....	1906	4	2	50
100 operations for acute intestinal obstruction and gangrenous hernia	Gibson: Ann. Surg. 32: 486, 1900.....	1900	554 gangrenous bowels	120	21
Gangrenous femoral hernia.....	Becker: Deutsche Ztschr. f. Chir. 176: 281, 1922	1922	17 resections 5 sutures 2 exteriorizations	4 2 0	23 40 0
.....			24	6	—
2,468 hernia operations.....	Hoguet: Surg., Gynec. & Obst. 37: 71, 1923....	1923	1 resection	1	100
.....	Springer, as reported in Arch. Surg. 45: 785, 1942	1924	.....	..	50.4
			4 inguinal	3	75
			8 femoral	5	62
			4 others	1	25
			16	9	56.3
Strangulated hernia.....	Frankau: Brit. J. Surg. 19: 176, 1931.....	1931	(inguinal) 2 exteriorizations 10 drain loops 16 sutures 33 resections 61	1 7 4 16 28	50 70 25 50 45
			(femoral) 2 exteriorizations 4 enterostomies 11 drain loops 40 sutures 59 resections	2 1 10 5 22	100 25 91 12.5 37
			116	40	34
			(umbilical) 13 resections 15 enterostomies 8 sutures	7 15 5	55 100 65
			213	95	44
Obstruction of bowel by strangulation	Melver: Am. J. Surg. 20: 171, 1933.....	1933	8 femoral 5 inguinal 5 umbilical 1 epigastric	4 2 5 ..	50 40 100 0
Strangulated hernia.....	Bowers: Ohio State M. J. 31: 28, 1935.....	1935	5	4	80
Treatment of strangulated external hernia	Cody: J. Iowa M. Soc. 26: 235, 1936.....	1936	.....	..	59
Strangulated hernia.....	Fulton: M. J. Australia 1: 73, 1938.....		8 resections 5 exteriorizations 1 closed; inoperable 20 (?)	5 5 1 10 (?)	62 100 100 50
Diagnosis and management of strangulated femoral hernia	Dunphy: J. A. M. A. 114: 395, 1940.....		7 resections 2 gangrenous at autopsy	2 2	29 100
Strangulated hernia.....	Douglas: Brit. M. J. 1: 555, 1942.....	1942	18 resections 11 exteriorizations 4 sutures	9 9 2	50 81 50
Diagnosis and management of incarcerated femoral hernia	McNealy and others: Surg., Gynec. & Obst. 74: 1605, 1942	1942	6 resections reported 1 3d stage	6 1	100 0
Strangulated hernia.....	Hay: Canad. M. A. J. 49: 46, 1943.....	1943	12 resections	8	66
100 cases of strangulated femoral hernia	Adelaide: Lancet 1: 765, 1943.....	1943			

The method has proved simple and safe by clinical trial. Patients in a moribund condition can be cured by it. It corrects the systemic derangements due to bowel distention. It restores the bowel to a healthy condition, so that the anastomosis is safe. It spares Poupart's ligament and makes possible the immediate cure, we believe in most cases, of the hernia.

The only cogent objection to the method is that it exposes the patient to the danger of general peritonitis from separation of the living from the gangrenous bowel at the femoral ring. Experience shows that this is not likely to occur. We have found the living bowel firmly attached to the femoral ring in all of our patients. A

Persistent vomiting had ensued. No bowel movements occurred following numerous enemas and administration of castor oil and other cathartics.

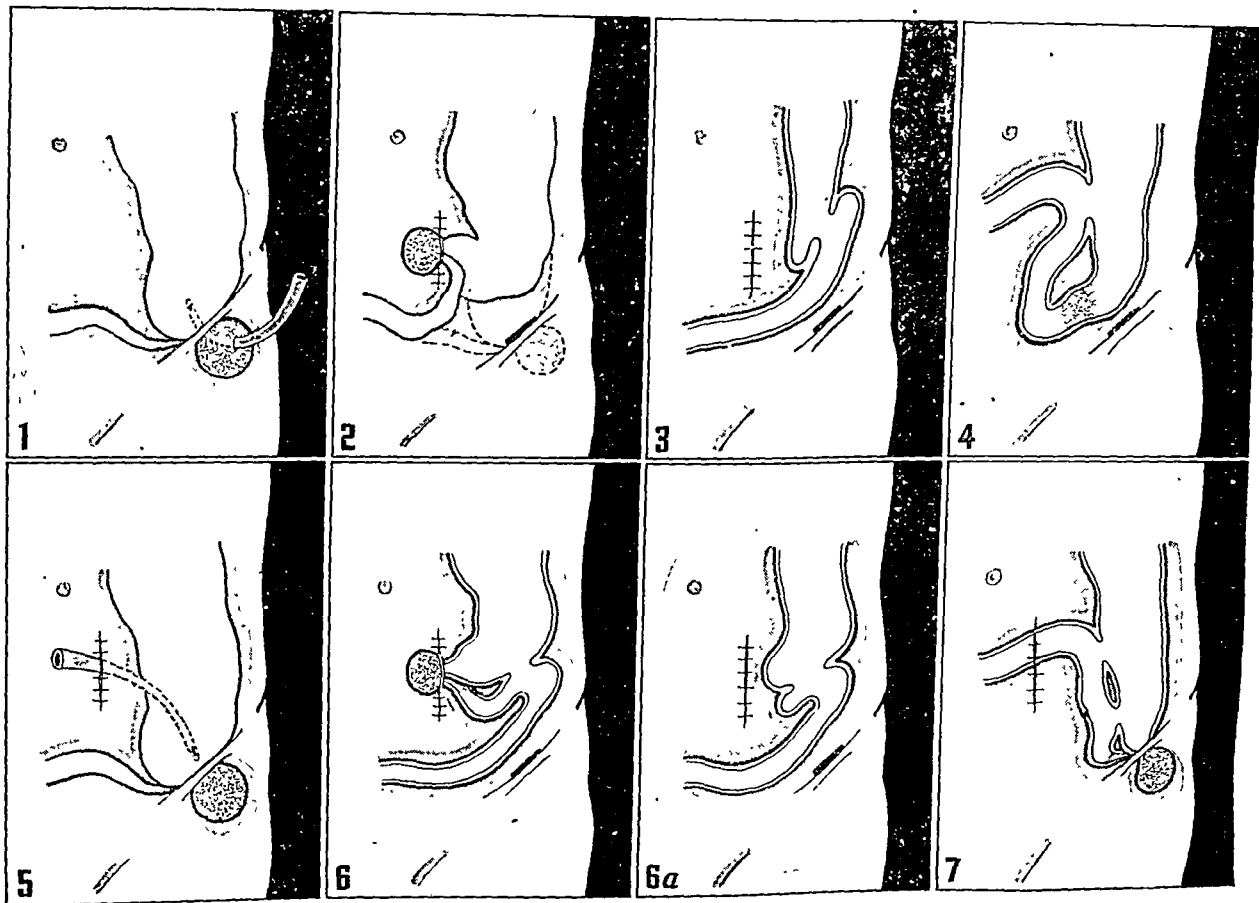
Examination.—The patient was acutely ill, her face brick dust color, her tongue dry, her skin loose. The abdomen was distended, everywhere tympanitic and silent. The skin of the abdomen was blistered by hot applications. There was a large, acutely tender swelling in the right groin. The skin over this was fiery red and edematous. The pulse rate was 86, the respiratory rate 26, the temperature 99.6 F., the blood pressure 138/70 and hemoglobin 13.5 Gm. Red blood cells numbered 4,500,000, white blood cells 16,400.

Treatment and Result.—The patient was given a preliminary injection by vein of isotonic solution of sodium chloride and

glucose. An incision was made parallel to and below Poupart's ligament over the most prominent portion of the swelling. The bowel was found totally gangrenous and foul. Penrose drains were inserted. A Miller-Abbott tube was passed a few hours after operation. This was in the jejunum in forty-eight hours and had reached the site of obstruction in seventy-two hours. The patient was given liquids and soft foods by mouth for seven days. She was then operated on for the second time. A short, very low, paramedial incision was made. The end of the tube was resected, and a short lateral anastomosis was done to unite the two severed ends. The omentum was stitched to the edge of the femoral ring. Penrose drains were inserted into the femoral canal. The abdominal wound was closed. Sulfathiazole was sprinkled over the wound surfaces after the peritoneum had been sutured. The patient had a bowel movement on the

Examination.—The patient was a very obese woman, acutely ill and severely dehydrated. The pulse rate was 110, the respiratory rate 28, the temperature 100.2 F., the blood pressure 140/75 and hemoglobin 15.5 Gm. Red blood cells numbered 7,790,000, white blood cells 10,800. The abdomen was distended, tympanic and silent.

Treatment and Result.—To empty the stomach, a Levine tube was passed. Isotonic solution of sodium chloride and 5 per cent glucose were injected by vein. The mass in the left groin was drained under very light anesthesia. It contained foul, gangrenous bowel. The Miller-Abbott tube was passed. In twenty-four hours it was in the midileum. In forty-eight hours it reached the site of obstruction. The patient was given blood plasma, whole blood, salt solution and vitamins by vein, and liquids and soft diet by mouth after the Miller-Abbott tube had reached its destination. Six days after passage of the Miller-



Methods of treating gangrenous bowel in external hernias:

1. Enterostomy done by opening down to gangrenous bowel and inserting catheter into proximal loop. The hernia is not reduced until a later, second operation, when anastomosis is done.
2. Gangrenous bowel in hernia is reduced and exteriorized through an abdominal incision. Anastomosis later.
3. Primary anastomosis done immediately either through femoral canal or through abdominal incision.
4. Questionable bowel is reduced and a short circuiting anastomosis is done.
5. Enterostomy is done through abdominal incision with catheter placed in proximal dilated bowel.
6. (Combination of 2 and 4.) Exteriorization of gangrenous bowel through abdominal incision, with short circuiting anastomosis.
- 6a. Following procedure 6, the blind loops of bowel together with the gangrenous tissue are resected and the ends are turned in.
7. Gangrenous hernia is unreduced, and a short circuiting anastomosis is done through abdominal incision.

fifth day after operation, and the Miller-Abbott tube was removed on the eighth day after the operation. The patient's postoperative course was complicated by a superficial wound infection and by a stomatitis and parotitis. We believe that the stomatitis was caused by a vitamin deficiency, since it promptly receded after administration of nicotinic acid. Both wounds had completely closed by November 17.

CASE 2.—History.—Mrs. E. S., aged 63, was admitted to Robert Long Hospital on Nov. 9, 1942 because of a tender, swollen mass which had appeared in the left groin five days before. Its appearance had been followed by cramping, epigastric pain, nausea and vomiting. No bowel movements had occurred since the day of onset despite enemas and cathartics.

Abbott tube the second operation was done as in case 1. The tube was left in place for six days more. Convalescence was complicated by a mild thrombophlebitis in the left leg. The inguinal incision healed without noteworthy infection. The patient was dismissed on Jan. 17, 1943.

CASE 3.—History.—Mrs. H. T., aged 86, was admitted to St. Vincent's Hospital on March 10, 1945 because of the appearance of a mass in the left groin about three weeks before. This had caused considerable pain but had apparently not caused bowel obstruction until about six days before admission, when the mass suddenly increased in size, and the patient began having cramping, abdominal pain and vomiting. Her condition had become steadily worse.

Examination.—The patient was emaciated and was desperately ill. The abdomen was distended and everywhere tympanic. The pulse rate was 104, the respiratory rate 22, the temperature 99 F. A large, acutely tender mass was present in the left groin. The skin over this was red and edematous.

Treatment and Result.—A preliminary injection of isotonic solution of sodium chloride and glucose was made. Under local anesthesia the hernial sac was incised and drained. It contained gangrenous bowel together with several ounces of soft, yellow fecal material. A Levine tube was passed. The passage of the Miller-Abbott tube was delayed for two days because we thought the patient had a spontaneous fecal fistula. When it became evident that this was not true, the Miller-Abbott tube was passed. This was difficult because of a cardiospasm, which had to be overcome with mercury bougies before the tube would enter the stomach. Once the tube was started, however, its progress was very rapid, and it reached the region of the left femoral ring in about thirty-six hours.

The general treatment of this patient was identical to that described in cases 1 and 2, but at about the time we were considering performing excision of the gangrenous bowel and anastomosis, the patient began to pass flatus and liquid material by rectum. Shortly after this we were able, by the injection of barium, to demonstrate that nature had in some way performed an anastomosis between the obstructed and collapsed portions of the bowel. The patient had had a number of loose bowel movements prior to this examination. We discovered, greatly to our astonishment, that the tube had passed through the newly formed anastomosis and had reached the middle of the transverse colon! The tube was removed, and fifteen days after admission the patient was up and about in her room.

We account for the almost incredible outcome in this case as follows: The small intestine had evidently been incarcerated in the femoral hernia for a period of over three weeks. During this time it is probable that the efferent and afferent portions of the bowel had become adherent where they were in contact. Following this, as the result of the passage of gas and intestinal contents into the incarcerated bowel, this became gangrenous. The gangrenous bowel then became separated from the living bowel, and nature performed an anastomosis between the two ends of living bowel.

Von Mátyás Mátyás³ described a method of treating these cases which consisted in freeing the incarcerated loop of bowel from the femoral ring—usually by division of this ring—followed by the making of a gun barrel enterostomy through the femoral canal. He placed drains around the two barrels of the enterostomy to prevent their retraction. He reports that in 3 cases this procedure was followed by a spontaneous anastomosis between the two ends of bowel. This must have happened in the case under consideration.

COMMENT

All the patients on whom we have used this procedure had femoral hernias. It should be applicable, however, to the treatment of strangulation obstruction in other external hernias. It should be very useful in the management of umbilical hernias containing strangulated pieces of bowel. We have observed 1 case of this condition, untreated, in which nature had performed a gun barrel enterostomy. An abscess which formed in the hernial sac had ruptured spontaneously.

The high death rate for external hernias containing gangrenous bowel is due to errors in treatment which are avoided by the method we have described.

1040 West Michigan Street, Indianapolis 7.

3. von Mátyás, Mátyás: Chirurgische Verfahren bei verstrickten inkarzierten Cruralhernien, bei welchen die Resektion nicht durchgeführt werden kann, *Zentralbl. f. Chir.* 63: 1754, 1936.

Clinical Notes, Suggestions and New Instruments

PENICILLIN IN THIOURACIL-INDUCED AGRANULOCYTOSIS

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Although to date no satisfactory reports of isolated organisms in cases of agranulocytosis have been published, death appears to be due to superimposed infection. This clinical impression has been strengthened by some recent reports of the therapeutic value of penicillin in the treatment of agranulocytosis.¹ Several months ago we ourselves experienced highly satisfactory results with penicillin in treating a case of agranulocytosis of unknown origin, incident to a septic sore throat, after all other known agents such as transfusions, pentnucleotide and liver therapy had failed. The consensus at present indicates that the septic process, which in itself tends to depress granulocytic maturation, is successfully controlled by penicillin.

Our interest in agranulocytosis has been stimulated by our continued study of thiouracil in the treatment of hyperthyroidism.² Though we were fortunate enough to treat our first 60 cases without encountering this serious complication, the expected reaction has been observed by us since publication of our paper. The dramatic response to penicillin of thiouracil-induced agranulocytosis prompts us to note the following case report:

REPORT OF CASE

A woman aged 52 presenting a classic picture of hyperthyroidism, with enlargement of both lower lobes of the thyroid gland and symptoms of five months' duration, was started on a daily dose of 0.6 Gm. of thiouracil. Twelve days later her basal metabolic rate had fallen from plus 85 per cent to plus 18 per cent, her blood pressure had dropped from 170/80 to 140/80, she felt less tired and nervous, and she had gained 6 pounds (2.7 Kg.). Her white blood cell count at that time was 7,750, with a normal differential. Medication was continued unchanged until five days later, when her differential showed 45 neutrophils, with a white blood cell count of 4,000. Thiouracil was stopped immediately. Thirty-six hours later she presented a typical picture of agranulocytosis, with a temperature of 104 F. and a white blood cell count of 2,400, with 2 band cells and 2 segmented neutrophils; this was substantiated by a sternal puncture. On admission to the hospital, penicillin therapy was instituted in doses of 20,000 units administered every three hours. In addition, supportive measures in the form of a transfusion of 500 cc. of whole blood and daily injections of 2 cc. of crude liver were given. Twelve hours later the temperature had dropped to 100 F. and the blood smear showed 8 segmented neutrophils and 12 band cells. Thirty-six hours after the institution of penicillin therapy the white blood cell count had risen to 5,300, with 33 segmented neutrophils and 20 band cells. On the third day the count showed 7,300 white blood cells, with 49 segmented and 7 band cells. The temperature reached normal on the fourth day, and penicillin was discontinued at that time, after the total administration of 560,000 units.

COMMENT

We have presented the report of a case of an agranulocytic reaction due to thiouracil in which early and vigorous penicillin therapy prevented generalized sepsis. We hope that the report of our experience will stimulate workers to the prompt use of this drug in other cases of granulocytic depression.

1130 Park Avenue.

From the Hospital for Joint Diseases.
1. Meredith, W. C.; Douglas, A. H. R., and Funk, Harold: Penicillin in Malignant Granulocytopenia, *U. S. Nav. M. Bull.* 43: 1017-1019, 1944
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SATURDAY, NOVEMBER 10, 1945

THE NATIONAL SCIENCE FOUNDATION

For some weeks hearings have been held by the subcommittee of the Committee on Military Affairs of the U. S. Senate on the proposals to create a National Science Foundation, a government agency to be charged with encouragement of scientific research. Several measures have been presented to the Congress to effectuate this objective. Their number and diversity indicate the difficulty of finding the best possible formula. Care is necessary if the objects sought are to be achieved without permitting domination of research by a federal bureaucracy and inhibition of private initiative or the spending of vast funds without adequate return. The work of the Committee on Medical Research and of the Office of Scientific Research and Development during the war proved that funds can be used satisfactorily to encourage research and to coordinate and intensify the speed with which the results of research can be applied. Much was accomplished toward diminishing the lag between the introduction of a new remedy and the determination of its toxicity and its field of usefulness.

Fundamental to the creation of the National Science Foundation is its structural organization. With but few exceptions, leaders of science who appeared in the hearings approved an organization which would be under the control of a directing board which would have as an executive officer a director whom the executive board would nominate to the President. The director would be responsible for administration of affairs of the National Science Foundation, but policies would be determined by the directing board and it would have the responsibility for selecting the universities, hospitals, institutes of research and other agencies to which grants could be made.

Under the directing board would be a number of subsidiary boards dealing with such subjects as the national defense, medicine and the basic sciences. Possibly there might be, in accordance with the recommen-

dation of President Truman, a division for the social sciences, although the point has been made that much research in the field of the social sciences is developed and promoted primarily with a view to securing political and legislative action. The social sciences are themselves so young and their technics at present so experimental and so poorly controlled as to indicate some doubt as to whether or not their development has proceeded sufficiently to warrant incorporation at this time in the proposed agency.

Great care must obviously be exercised as to the technic by which various federal agencies, such as the War, Navy, U. S. Public Health Service, maternal and infant welfare and similar groups are coordinated with the National Science Foundation.

Again the question of patents is introduced by some of the legislative proposals for the creation of the National Science Foundation. A majority of those who participated in the hearings are convinced, that the whole question of patents requires far more study than is now being given to it and that patents might well form the subject of subsequent action, perhaps with the recommendation of the directing board once the agency is established.

Among the best possible activities to be conducted by the proposed National Science Foundation is the creation of fellowships, residencies, traveling scholarships and similar positions to be subsidized with the aid of federal funds. By this technic young men of promise may be given opportunity to show their worth and thus far more competent scientists mobilized in the field of research.

Another function is the encouragement of national and international exchange of scientific and technical information. Unquestionably progress was intensified during the war by the interchange of medical information between the medical research councils of Great Britain, Canada and our own country. In the postwar period a similar organization might involve inclusion of all the nations of the world, perhaps with the aid of a suitable health section developed under the organization of the United Nations.

By the system which prevailed during the war, invaluable time was saved in extending the uses of penicillin and in promoting its manufacture on a large scale and its availability at a small cost. The number of lives thus saved is tremendous, indeed incalculable. Similar investigations in the uses of the sulfonamide drugs, in the development of the uses of blood and the various derivatives of blood and investigations in the treatment of burns, in the control of malaria and many tropical disorders, in diet and in nutrition have brought fruitful results by the utilization of a well coordinated and intensified program of study.

The Board of Trustees of the American Medical Association and a special committee representing the American College of Physicians, the American College of Surgeons and the American Medical Association through the Committee on Postwar Medical Service have recommended enactment of a suitable measure for the creation of a National Science Foundation. As Torald Sollmann has said, "Research is a bird that sings only when it is free. Discovery requires the broadest possible liberty to search in as many places as possible, by as many competent scientists as possible, in any manner and any means that they themselves consider possible." In the structural organization of the proposed National Science Foundation the recommendations of the Magnuson Bill (S. 1285) seem to approach more nearly the type of structure that would achieve the objective sought and conserve the factors of private initiative and liberty that have given the United States a place in the sun where scientific research is concerned.

TOXICITY OF DDT

In order to find a standard cell system for a study of the effects of DDT, Lewis and Richards¹ of the Wistar Institute, University of Pennsylvania, made numerous tests of the possible toxic action of DDT on *in vitro* tissue cultures. In their preliminary tests a small drop of saturated alcoholic or acetone solution of DDT was allowed to dry on a cover glass. Hanging drop cultures of heart, brain, intestine and spleen from seven to eight day chick embryos or one day rats were set up so as to include the dry DDT. During the seven day observation period the cell growth, migration and mitosis of fibroblasts, entoderm and macrophages were not appreciably different from those in control cultures without DDT. As they moved about in the cultures living fibroblasts often touched or even migrated over DDT crystals without appreciable injury.

This apparent nontoxicity was confirmed with several series of roller tube cultures of heart, liver, kidney, stomach, intestine, skeletal muscle, brain and spinal cord, enough crystals of DDT being added to all but the control tubes to get a saturated solution with many crystals left over. In all cases the outgrowth of fibroblasts, macrophages, entoderm, liver cells, kidney epithelium, nerve fibers and muscle fibers were identical in the DDT and control tubes during the ten to twenty-one day observation period. There was no indication that the DDT had any toxic effects on the cells.

Similar tests were made with a quick killing emulsion consisting of 1 per cent DDT in 9 per cent olive oil, 1 per cent gum arabic and 90 per cent saline solution. Intracardiac injection of this emulsion killed mice within from forty-five minutes to seventy-six hours, control

injections of DDT-free emulsions being nontoxic. Added to roller tube cultures of heart, kidney, stomach, intestine, liver, muscle or nerve fibers, however, the DDT emulsion produced no demonstrable toxic effects.

The seeming paradox of the lethal effects of DDT when administered to intact animals as contrasted with its nontoxicity for individual tissue cells is now under investigation.

MATERNAL AND CHILD WELFARE: THE PEPPER BILL

Senate bill 1318, to make more adequate provision for the health and welfare of mothers and children and for services to crippled children, has not yet reached the stage of hearings. The bill is called the "Maternal and Child Welfare Act of 1945." Grants by the federal government to the states for encouraging preventive medical services and for aiding the crippled and for promoting maternal and infant welfare are now incorporated in our scheme of government. Under the E. M. I. C. program that prevails as a war measure, the chief of the Children's Bureau controls a bureaucracy that functions in a totalitarian manner and without any of the restraints that should be developed in a democratic system of government. The present measure would perpetuate and expand this dangerous invasion of the field of medical care. The director chooses his or her own advisory boards and is not under any compulsion to pay the slightest attention to the recommendations of these boards. In the past such recommendations have been occasionally disregarded. In some instances members have been prevented from giving any publicity to the considerations of the board. Actions have been taken without any public announcement of the proposals to be followed. In many other ways the democratic process has been disregarded.

Without an adequate study as to the needs of the individual states for maternal and infant services and the ability of the states to meet these needs, accurate determination of funds required is not possible. The proposals of the Hill-Burton bill, by contrast, require that each state create a special agency to be concerned with the construction of hospitals, health centers and diagnostic laboratories and that an adequate study of the need be made with the submission and approval of the plan in a public hearing before any grant is made. Under the proposed S. 1318 funds can be spent simply on approval by the chief of the Children's Bureau of any plan that any state submits. In the past, states have been told by the directors of federal bureaus the kind of plans they must submit before they even began thinking of drawing up plans.

Section 103 of the new measure discusses further the approval of state plans. No limitation of any kind is made as to those who would be entitled to governmental or state aid. The bill simply proposes to grant maternal and infant care and care of the crippled to

1. Lewis, W. H., and Richards, A. G., Jr.: *Science* **102**: 330 (Sept. 28) 1943.

anybody in the state who applies. In the words of the bill, "services and facilities . . . shall be available to all mothers and children who elect to participate in the benefits of the program." If every mother and child elect to participate, the funds obviously are completely inadequate. The federal government might be asked to provide for the complete cost of maternal care to between 3,000,000 and 4,000,000 mothers annually and for the complete medical care of all children up to the age of 21 years. Assuming a total each year of 4,000,000 cases of maternal care, including children born, stillbirths, abortions and miscarriages, at a minimum cost of \$50 per case, \$200,000,000 a year would be required for that purpose. This would not include the costs of hospitalization. Assuming in the United States 50,000,000 children under 21 years of age, with an average cost per child of \$10 a year for care, the total would be \$500,000,000, making the amount necessary for appropriation for this care \$700,000,000 annually. Adding the costs of hospitalization might involve another 400,000,000 dollars. Unless some restriction is placed on the services to be rendered and the persons to whom they are to be rendered, the government is placed in the position of taking over completely the care of mothers and children and at an annual cost of more than one billion dollars without any special taxation to meet the purpose. This bill would apparently extend the provision of the Social Security Act without increasing the taxation under the Social Security Act for the purposes it intends to serve. And to all of this must be added many millions more as the cost of administration.

By the proposals of part 6 of section 103, as indicated on page 5, maternal and infant care and the care of the child both healthy and crippled would be standardized on a low basis. Such an action would inhibit progress in the care of mothers and children and would, in fact, depreciate the quality of the service rendered. The service given would be service to meet a fixed fee and not the best possible service that should be given according to the needs of the individual patient. Part 8 of this section provides for the introduction of the innumerable forms and reporting systems that bureaucracies require, placing on the medical profession a burden that results in making the form more important than the service rendered.

Part 10 suggests that the same general advisory council shall serve in the state both the maternal and child health and crippled children's programs, which means the establishment of councils that would lack in expert knowledge, since the problem of the crippled child requires a type of expert knowledge quite different from that concerned with the maternal and child health.

Section 104, which concerns payment to states, provides for simple matching appropriations which fail

to take into account that many of our states are quite capable of handling their entire maternal and infant care problem for themselves; other states require federal aid far beyond anything that the state is able to match.

Most pernicious in the entire measure is the provision for federal advisory committees. The chief of the Children's Bureau appoints his own advisory committee, which means that he appoints a committee that will do what he says. If he does not like what the committee does, he may encourage resignation and get another committee. Chiefs of bureaus have not in the past hesitated to enforce secrecy on members of their advisory committees as to publicity given to their considerations. A conference of state health officers is provided for also. The vast majority of the interest of the bill is in medical care; medical care is a physician's problem, not primarily a problem of public health officials. The committee of the Congress which reported out the Hill-Burton bill required that public health centers be not concerned with medical care.

In offering services for crippled children, the measure fails to take into account the varying definitions of crippled children that prevail in individual states. In some states a child with rheumatic fever is considered a crippled child; in other states it is not. The public annually provides through its contribution to the National Foundation for Infantile Paralysis, Inc., some \$15,000,000 to be used in research and locally for the care of the crippled child. Proposals are now being made to collect \$5,000,000 for Sister Kenny's fund. A survey conducted some years ago shows that there are almost a thousand different voluntary organizations for the care of the crippled in the United States, all of them collecting funds from the public for this purpose and all of them having thereby a personal philanthropic interest in the problem. Entrance by the federal government on a large scale such as proposed in this measure for the care of the crippled will depreciate and eliminate the public's interest through these volunteer organizations and thereby probably do more harm than good. Means should be found for coordinating the various activities now existing for the care of the crippled. The state should aid, but the state should not eliminate private philanthropic effort.

For the crippled as for maternal and child care, this law would make the chief of the Children's Bureau a virtual dictator over the care of the crippled in the United States. The federal advisory committees in relation to the care of the crippled are, as with those in maternal and child care, simply tools of the chief of the Children's Bureau.

The Maternal and Child Care Act of 1945 appears to THE JOURNAL to be a hastily conceived, potentially dangerous, piece of legislation. The objectives it seeks to reach are desirable. The proposed measure would not obtain those objectives and would destroy much that has already been done toward their accomplishment.

Current Comment

THE NOBEL PRIZE AWARDS

Sir Alexander Fleming of London and Sir Howard W. Florey and Dr. Ernst B. Chain of Oxford University recently were awarded the 1945 Nobel Prize for physiology and medicine. The 1943 award was made to Drs. Edward A. Doisy, professor of biochemistry at the St. Louis University School of Medicine, and Henrik Dam of Copenhagen, who was in the United States at the time. The 1944 award was presented to Drs. Joseph Erlanger, professor of physiology at Washington University School of Medicine, St. Louis, and Herbert Spencer Gasser, director of the Rockefeller Institute, New York. According to the Stockholm announcement, the 1945 award is made in recognition of the pioneer work of these three investigators in the discovery of penicillin and its healing effects in treating infections. The recipients will share equally in the prize, which amounts to about \$30,000. The history of the discovery of penicillin by Fleming, Florey and Chain and of its application to the treatment of infections has been previously reviewed editorially.¹ Fleming's discovery of penicillin as an antibiotic agent was published in 1929; Florey and Chain demonstrated a method of obtaining penicillin in relatively pure form and first employed this substance clinically during the years 1938 to 1940. Fleming, Florey and Chain are universally recognized as the pioneers in penicillin research, although other workers have contributed greatly to the preparation of penicillin and its clinical use today.

MEDICAL SCHOOL DECELERATION

Elsewhere in this issue is a statement by the Council on Medical Education and Hospitals urging the Army to permit medical school deceleration even though Army Specialized Training students should remain on active duty in the program. Such deceleration would not affect the supply of replacements for medical officers for two years, since the present juniors, completing that year in April 1946 in most schools, could not be available until they have had an additional nine months of accelerated education and an internship of nine months or a year. Insistence on acceleration by the Army would prevent the schools from inaugurating intensive externship "courses" for physician veterans, who will seek such work in increasing numbers. A veterans' externship program can be conducted only in schools whose clinical teaching facilities are freed by the absence of junior and senior externs. The Army has a serious obligation to its own veterans in this matter. Why should not the Army make adjustments similar to those made by the Navy, which is quite willing for medical schools to decelerate at least temporarily, if they wish? Even though certain schools may decide to adopt a modified accelerated program after the current educational emergency presented by the veterans has passed, the need for meeting current obligations is obvious.

1. The History of Penicillin, editorial, J. A. M. A. 126: 170 (Sept. 16) 1944.

VITAMIN K AND INFANT MORTALITY

The value of vitamin K in preventing hemorrhage in the newborn depends on whether a prolongation of coagulation time is an essential feature of the hemorrhagic manifestations. Vitamin K has a definite effect in reducing the coagulation time when prolongation is due to prothrombin deficiency. The prothrombin time is usually prolonged in newborn infants for the greater part of the first week of life. This is the basis for the routine prophylactic use of vitamin K ante partum or neonatally. Confusion exists in the differentiation between true hemorrhagic disease and hemorrhagic manifestations in the newborn, with subsequent variations in the reported incidence and mortality of these conditions. Some investigators have made amazing claims for reduction in the incidence and mortality rate of hemorrhagic disease by routine vitamin K prophylaxis. Sanford and his co-workers¹ in their study of vitamin K were unable to show that hemorrhagic manifestations in the newborn were associated with a prothrombin deficiency; nor were they decreased by administration of vitamin K. Sanford maintained that conditions other than vitamin K deficiency were responsible for the majority of hemorrhagic manifestations in the newborn. Simple evidence of bleeding was not a justification for a diagnosis of true hemorrhagic disease, in which there is a prolongation of prothrombin time and vitamin K is of value. True hemorrhagic disease occurred infrequently, once in 2,500 births in Sanford's series. In order to evaluate claims that vitamin K administered routinely would reduce neonatal mortality rates by decreasing the number of infants who die of hemorrhage, a study was carried out at the Chicago Lying-In Hospital.² Vitamin K was given to all patients delivered for a two year period (1941-1942). Then for the subsequent two year period (1943-1944) medication was not used at all. Examination of the death rates for the two periods showed almost identical rates for the first ten days of life. Of 369 infants who were born dead or who died in the first ten days postnatally, 334 were subjected to postmortem examination. "Each group has approximately the same number of infants with hemorrhagic manifestations, and associated with practically all of these there were abnormalities of labor or delivery which appeared to be definite causative factors." In only 2 infants who were examined post mortem did the possibility of true hemorrhagic disease exist, but in neither was the diagnosis conclusive. Both these infants failed to respond to vitamin K. If these were cases of true hemorrhagic disease, vitamin K failed to cure them; if they were not, then true hemorrhagic disease did not occur in over 13,000 deliveries. Potter concludes that the routine administration of vitamin K does not reduce infant or fetal mortality and that hemorrhagic disease as an entity probably has some other inciting factor than a prolongation of the prothrombin time.

1. Sanford, Heyworth N.; Shmigelsky, Irene, and Chapin, Josephine M.: Is Administration of Vitamin K to the Newborn of Clinical Value? J. A. M. A. 118: 697 (Feb. 28) 1942.

2. Potter, Edith L.: The Effect on Infant Mortality of Vitamin K Administered During Labor, Am. J. Obst. & Gynec. 50: 235 (Sept.) 1945.

MEDICINE AND THE WAR

ARMY

REGULAR ARMY OFFICERS TO RECEIVE PROFESSIONAL TRAINING

One hundred regular army officers have been assigned to the army general hospitals and medical installations as part of the Army's new plan to give professional training to officers of the Regular Army Medical Department. Under this policy the Regular Army Medical Corps officer will be assured a professional career and will receive graduate training, aid in obtaining board certification for medical specialists from recognized civilian specialty boards and security not usually available in civilian practice. The new program also offers opportunities for Regular Army officers now doing administrative work to understudy doctors who have been active in professional practice during the war. Twenty-one of the one hundred officers have been assigned to specialize in internal medicine and thirty-three in general surgery. The others are assigned in radiology, eye, ear, nose and throat, anesthesiology, neuropsychiatry, urology, pathology, orthopedics, obstetrics and gynecology and public health.

ALLERGY TESTS AT FORT LEWIS

Suitable allergy tests to determine the extent of skin irritation caused by woolen clothing impregnated with insect repellent are to be conducted at Fort Lewis, Washington, under the direction of Capt. Harry Levitt of the Dermatology and Allergy Department at Fort Lee, Virginia.

One hundred and fifty soldiers who have volunteered for the test have been divided into three groups. Fifty will be equipped with untreated woolen uniforms and will act as a control group. Another fifty will wear woolen clothing impregnated with a miticide preparation employing Tween-80 as an emulsifier. The uniforms of the third group will be impregnated with a miticide solution that uses tetrachlorethane as a solvent.

The results of the test will be transmitted to the Preventive Medicine Service of the Surgeon General's Office, Sanitation and Hygiene Division.

STUDY ORGANIZATION AND RESEARCH PROGRAM AT SCHOOL OF AVIATION MEDICINE

The AAF School of Aviation Medicine, Randolph Field, Texas, is to serve as a model for a similar institution to be established in Sweden, according to medical officers from the Swedish Royal Air Forces visiting the United States. The visiting party consisted of Lieut. Col. L. Westering, Deputy Air Surgeon to the Swedish Royal Air Forces, Capt. Kjell Rasmusson, member of the Swedish Air Forces, and Prof. E. Christensen, civilian consultant. After studying the organization and research program of the School of Aviation Medicine they will return to Sweden on completion of a nationwide tour to make recommendations for establishing an aero-medical school in their own country.

TEMPORARY PROMOTIONS

The President recently recommended to the Senate the temporary promotions of the following medical corps officers to the grade of brigadier general:

- Col. Clyde McKay Beck, commanding officer, Ashford General Hospital, White Sulphur Springs, W. Va.
- Col. Sidney L. Chappell, commanding officer, England General Hospital, Atlantic City, N. J.
- Col. Robert M. Hardaway, commanding officer, Bushnell General Hospital, Brigham City, Utah.
- Col. William C. Menninger, director of the Neuropsychiatry Division in the Surgeon General's Office, Washington, D. C.
- Col. Luther R. Moore, surgeon of the Ninth Service Command, Fort Douglas, Utah.
- Col. Edward A. Noyes, surgeon of the Fifth Service Command, Fort Hayes, Ohio.

AWARDED MERITORIOUS SERVICE UNIT PLAQUE

The Medical Detachment of the 1st Infantry Regiment was recently awarded the meritorious service unit plaque for "meritorious service rendered during the Luzon, Philippine Islands, campaign. From Jan. 9, 1945 to April 30, 1945 the Medical Detachment of the 1st Infantry Regiment displayed outstanding devotion to duty in the performance of exceptionally difficult and hazardous assignments. Through the untiring efforts and tenacious determination of the officers and men of the detachment, personnel of the regimental combat team received the highest degree of medical attention, rendered under the most difficult weather and terrain conditions and subject to the hazards of combat throughout the Luzon, Philippine Islands, campaign. Personnel of the medical detachment landed with all assault waves in the performance of exceptionally difficult and hazardous assignments. Through the untiring efforts and tenacious determination of the officers and men of the detachment, personnel of the regimental combat team received the highest degree of medical attention, rendered under the most difficult weather and terrain conditions and subject to the hazards of combat throughout the Luzon, Philippine Islands, campaign. Personnel of the medical detachment landed with all assault waves of the Luzon operation and were soon followed by the headquarters personnel, who landed with a nonassault wave. The bombed and shelled civilian population was immediately administered much needed medical aid and, as the combat team progressed toward successive assigned objectives, the ever increasing medical problem of civilian personnel was handled with utmost efficiency and forethought. Throughout the combat assignments medical aid men, surgical technicians, litter bearers and officer personnel advanced with foremost assault elements, constantly displaying aggressive efforts in rescuing wounded personnel from enemy lanes of fire, sheltering them through severe mortar and artillery barrages, administering blood plasma in positions under intense fire, removing the dead from severely contested areas and meeting every demand of our command in rendering prompt and efficient medical aid. Although subject to artillery, mortar and sniper fire, and during constant relocation, rear and forward medical installations were established and operated with such a degree of efficiency and rapidity that administration of medical aid and evacuation to rear echelons were accomplished with a minimum loss of life. . . . The unselfish devotion to duty, advance preparation for expenditure of energy and outstanding initiative of the officers and enlisted personnel of the detachment reflect the highest credit on the military service. The outstanding performance of duty, in addition to exemplary standards of discipline, morale, military courtesy and appearance, merits the fullest credit and is highly commendable."

SWEDISH SURGEON GENERAL VISITS MEDICAL DEPARTMENT

By special invitation of the War Department, Surg. Gen. David Lindsjo and Surg. Comdr. Karl Erick Groth of the Royal Swedish Defense Forces recently visited numerous army installations for the purpose of studying the organization and training methods of the Army Medical Department. Inspection of these installations began with an introductory visit to the Training Division, Office of the Surgeon General, and included Army General Hospitals Walter Reed, Fitzsimons, Kennedy, Halloran, Mason, Thomas M. England and Valley Forge. Their itinerary also included tours of several medical schools, supply depots, research and equipment laboratories and medical induction and separation centers.

AWARDS MADE TO ARMY MEDICAL DEPARTMENT

Of the 1,400,409 decorations given in World War II in recognition of meritorious service and gallantry, 6 per cent were received by Medical Department personnel. These figures are exclusive of the Air Medal and the Purple Heart.

ARMY AWARDS AND COMMENDATIONS

Major John K. Meneely Jr.

The Bronze Star and two oak leaf clusters to the Bronze Star were recently presented to Major John K. Meneely, formerly of New Haven, Conn. The citation accompanying the Bronze Star described his "meritorious service in combat from Feb. 19, 1945 to March 10, 1945 in the Apennine Mountains in Italy. The entry of a regiment of mountain infantry into combat for the first time entailed many problems and difficult situations. During this action in rugged country under the most dangerous conditions Major Meneely, the regimental surgeon, operating under terrific handicaps, planned and directed the efficient and speedy treatment and evacuation of the wounded. Through his tireless efforts and superior personal supervision the regiment's mission was accomplished with the maximum care of personnel, saving many lives and relieving much suffering. This commendable performance earned for him the respect and admiration of all his associates and is deserving of much praise."

The citation accompanying the first oak leaf cluster to the Bronze Star called attention to Major Meneely's "heroic achievement in action of April 29, 1945 near Torbole, Italy. During the fierce fighting on the shores of a large lake a battalion aid station became separated from its collecting point. Major Meneely, aware of the urgent need for reestablishing an area where the wounded might receive maximum care and speedy evacuation, courageously set out in an assault boat during the height of the enemy action to establish an advance station. On arrival at the chosen site he found the terrain unsuitable, so continued onward to a town recently cleared of the enemy. Here he established his collecting point and again exposed himself to deadening artillery fire to reach the regimental aid station, where he informed litter bearers of the newly established collecting area and arranged for proper evacuation from this site. After returning to this forward location he worked tirelessly to insure maximum efficiency in processing the many casualties. His noteworthy accomplishments were essential in the saving of much suffering and life, justly gaining the sincere gratitude and respect of all. The high courage and keen sense of duty displayed by Major Meneely are truly indicative of the highest qualities of the Army Medical Department."

The second oak leaf cluster was awarded "for meritorious service in combat during the period April 14, 1945 to May 2, 1945 in the Apennine Mountains and Po Valley, Italy. As regimental surgeon and commander of the medical detachment during the final offensive in Italy, Major Meneely was faced with the difficult problem of treating and evacuating hundreds of casualties from a rapidly advancing front, which moved from the Apennine Mountains across the Po Valley and into the foothills of the Alps within the space of twenty days. The difficulties of keeping his aid stations moving with the front and operating efficiently to care for the heavy casualties required the finest initiative and skill. Almost every available means of transportation was used to carry the wounded men from the battlefield to the hospital in the rear, including litters, jeeps, ambulances, captured army vehicles and, at one time during the attack along the shores of Lake Garda, amphibious trucks and speedboats. His remarkable organization and execution of this difficult task resulted in the saving of many lives. He constantly worked with the forward aid stations, often under heavy fire, and accomplished his duties at all times, no matter what the difficulties or dangers, with the utmost skill and success. His outstanding achievements have earned Major Meneely the highest commendation and praise." Dr. Meneely graduated from Yale University School of Medicine, New Haven, in 1941 and entered the service Jan. 29, 1942.

Captain Frederick Firestone

The Silver Star and oak leaf cluster to the Silver Star were recently awarded to Capt. Frederick Firestone, formerly of Jamaica, N. Y. As related in the citation accompanying the Silver Star award, "on March 21, 1945, in the vicinity of —, Germany, two men too severely wounded to be moved were left on the field within 30 yards of an enemy machine gun when

their company was forced to withdraw. Captain Firestone, 3d Battalion surgeon, realizing their precarious position, went to their aid. Although he identified himself to the enemy as a medical officer, he was subjected to intense machine gun fire. With utter disregard for his life Captain Firestone, followed by a litter team, crawled 300 yards to the wounded men and, oblivious of the enemy fire, administered plasma, rendered medical aid and supervised their evacuation. His action reflected the highest traditions of the military service."

The following citation accompanied the Oak Leaf Cluster to the Silver Star: "For gallantry in action. On Nov. 20, 1944, on the outskirts of Barr, France, informed that a seriously wounded man could not be evacuated, Captain Firestone, battalion surgeon, secured a plasma set and ran 100 yards through hostile fire to the casualty and administered aid. Later in the day, after several unsuccessful attempts to reach a seriously wounded tank commander lying in a fire swept street, Captain Firestone ran from house to house until directly opposite the casualty. He then crawled into the street and dragged the man into a building, where he administered aid. His actions reflected the highest traditions of the military service." Dr. Firestone graduated from the Faculty of Medicine of the University of Vienna in 1937 and entered the service May 20, 1944.

Major Sigsbee R. Seljeskog

Major Sigsbee R. Seljeskog, formerly of Minneapolis, was recently awarded the Bronze Star "for meritorious service in connection with military operations against the enemy as commanding officer, Hospitalization Unit 1, 13th Field Hospital, from June 8, 1944 to Jan. 4, 1945 in France, Belgium and Germany. Displaying sound judgment and marked ability, Major Seljeskog on landing in France on June 8, 1944 quickly organized and established the first field hospitalization unit to admit casualties sustained in the invasion of the European continent. His initiative and untiring efforts directly contributed to the fulfillment of the extreme medical needs of the amphibious operation and did much to lessen the burden of the overcrowded clearing stations in the beach area. During subsequent operations Major Seljeskog's diligence and industrious attention to duty were instrumental in saving the lives of many troops and in adding to the physical comforts of hundreds of others." Dr. Seljeskog graduated from the University of Minnesota Medical School, Minneapolis, in 1936 and entered the service June 1, 1942.

Captain Albert Kaplan

Capt. Albert Kaplan, formerly of St. Louis, was recently awarded the Bronze Star. "Captain Albert Kaplan," the citation read, "served against the Japanese forces on Luzon, Philippine Islands, from Jan. 11 to June 30, 1945. During this time Captain Kaplan served as company officer and platoon leader in the clearing company of an infantry division. In this capacity Captain Kaplan, through untiring effort and application of superior professional skill, effectively treated hundreds of wounded and sick patients and returned them to duty in a minimum of time. By virtue of a comprehensive knowledge of his assignment, Captain Kaplan personally supervised moving of equipment and establishing model stations in a most rapid and efficient manner. The constant devotion to duty displayed by Captain Kaplan reflects credit on himself and the medical corps and was in keeping with the highest traditions of the military service." Dr. Kaplan graduated from Washington University School of Medicine, St. Louis, in 1936 and entered the service Oct. 9, 1942.

Major John F. Cary

Major John F. Cary, formerly of Sheboygan, Wis., was recently awarded the Bronze Star and a citation for meritorious service in connection with military operations against the enemy from Dec. 24, 1944 to March 25, 1945. The citation states that Major Cary "performed his duties as regimental surgeon in a highly commendable manner. His professional brilliancy, diligence, attention and devotion to duty are in keeping with the finest traditions of the Army Medical Corps." Dr. Cary graduated from Loyola University School of Medicine, Chicago, in 1938 and entered the service March 5, 1941.

Brigadier General Joseph I. Martin

The Distinguished Service Medal was recently awarded to Brig. Gen. Joseph I. Martin, formerly of Washington, D. C., who, according to the citation accompanying the award, "served with distinction as surgeon, Fifth Army, in Italy from December 1944 to May 1945. During the winter of 1944-1945, while the Fifth Army was deployed across the Apennines from a point below Bologna to the Ligurian Sea, he skilfully deployed medical support to meet the rigors of a winter campaign, despite extremely difficult climatic and terrain conditions. As a result of his foresight and wise counsel, disease rates which might otherwise have weakened the Fifth Army before its final attack remained at record low levels. When the victorious April offensives began he devoted himself completely and selflessly to the task of furnishing constant medical service for the sick and wounded. With comparatively few hospitals at his disposal to support an attack of such magnitude, he spent long hours in the field, visiting units under his direction, counseling, supervising and insuring that each casualty received the finest possible medical treatment. He solved the difficult problem of hospitalizing and evacuating thousands of prisoners of war without once jeopardizing the efficient treatment of American and Allied troops. His relations with surgeons of Allied forces under Fifth Army operational control were conducted in the highest spirit of friendly cooperation. His magnificent record of achievement contributed materially to the successful operations of the Fifth Army." General Martin graduated from the Chicago Medical School in 1918 and entered the service July 31, 1918.

Major Walter R. Stager

The Legion of Merit was recently awarded to Major Walter R. Stager, formerly of Dover, Ohio, "for exceptionally meritorious conduct in the performance of outstanding services from March 22, 1943 to June 30, 1945." The official citation stated that "the difficulties and problems involved in maintaining every pilot at his peak of physical and flying efficiency were quickly recognized by Major Stager. His responsibility was great and he executed this responsibility in a superior manner. He proved himself a master of improvisation, and the words 'can't,' 'impossible' and 'unavailable' were not in his vocabulary. In caring for the individuals subject to the bleak weather conditions and monotonous daily life in the Aleutian Islands this officer made his personality and untiring efforts a needed stimulant to the health and happiness of all members of this command. The self sacrifice made, the intense loyalty displayed and the unrelenting devotion to duty shown by Major Stager during his tour of duty have contributed greatly to the activities of the Army Air Forces in this theater." Dr. Stager graduated from Creighton University School of Medicine, Omaha, in 1933 and entered the service Sept. 11, 1942.

Lieutenant Colonel C. B. LaDine

Lieut. Col. C. B. LaDine, formerly of Indianapolis, was recently awarded the Bronze Star for meritorious service in connection with military operations of the 95th General Hospital from May 22, 1944 to Feb. 10, 1945. Colonel LaDine was executive officer and was in charge of the complete organization of the hospital, which was transported to France shortly after D day and served close behind the front lines in the Third Army. Colonel LaDine is now the executive officer of the Thayer General Hospital, Nashville, Tenn. He graduated from Indiana University School of Medicine, Indianapolis, in 1939 and entered the service July 22, 1942.

Lieutenant Colonel Berthel Henning

The Bronze Star was recently awarded to Lieut. Col. Berthel Henning, formerly of San Francisco, "for meritorious service in connection with military operations as commanding officer, 7th Field Hospital, from July 1, 1944 to May 7, 1945. Lieutenant Colonel Henning has maintained the morale and efficiency of the personnel of his unit by his intense zeal, personal example and superior qualities of leadership. Even under the most adverse circumstances with which his personnel had always to contend he kept their operating efficiency at a peak. Although his unit was equipped to handle 400 patients at one time, he

arranged personnel and responsibilities so efficiently that the hospital consistently handled 600 beds, and, at one site, 1,200 beds. Lieutenant Colonel Henning, by superior ability and devotion to duty, was largely responsible for the outstanding accomplishments of the 7th Field Hospital." Dr. Henning graduated from the University of California Medical School, San Francisco, in 1925 and entered the service Feb. 2, 1941.

Captain A. David McKinley

The Soldier's Medal was recently awarded to Capt. A. David McKinley, formerly of Indianapolis, for his heroic action in trying to rescue a wounded pilot from a burning plane on Saipan, January 19. Captain McKinley was the flight surgeon on flight-line duty when the plane, in attempting to take off on a test flight, crashed and burned. The flames soon spread to a cane field and on a large ammunition dump, setting that afire. Quite a large number of officers and men were killed or wounded. Dr. McKinley graduated from Indiana University School of Medicine, Indianapolis, in 1939 and entered the service July 1, 1942.

Major Kenneth B. Babcock

Major Kenneth B. Babcock, formerly of Detroit, was recently awarded the Bronze Star "for meritorious service in support of combat operations in North Africa, Corsica and Italy from June 1, 1943 to May 2, 1945." Major Babcock established and efficiently operated a 100 bed hospital in the Anglo-Egyptian Sudan and later skilfully directed 100 bed hospitals in Libya, Corsica and Italy in climate and terrain varying from the blazing deserts of Africa to the cold, mountainous regions of Italy. Dr. Babcock graduated from the University of Michigan Medical School, Ann Arbor, in 1926 and entered the service Aug. 14, 1942.

Captain Clifton Woolley

The Silver Star was recently awarded to Capt. Clifton Woolley, formerly of Columbiana, Ala. "With utter disregard for his own safety," stated the citation accompanying the award, "Captain Woolley covered 3,000 yards through enemy-held territory to operate on a wounded soldier. . . . The great courage under fire, aggressiveness and devotion to duty displayed by Captain Woolley saved a soldier's life and reflects great credit on himself and the Medical Department of the United States Army." Dr. Woolley graduated from the University of Tennessee College of Medicine, Memphis, in 1939 and entered the service Aug. 20, 1942.

Major John C. Adams

Major John C. Adams, formerly of Portland, Ore., was recently awarded the Bronze Star, having "distinguished himself by meritorious service in connection with military operations from Jan. 21 to May 8, 1945. Major Adams performed his duties in an outstanding manner. Through his surgical skill, sound judgment and devotion to duty he contributed materially to the high standard of medical service rendered by his unit." Dr. Adams graduated from the University of Oregon Medical School, Portland, in 1926 and entered the service 1943.

Lieutenant Colonel Maxwell R. Bernstein

The Bronze Star was recently awarded to Lieut. C. well R. Bernstein, formerly of Pittsburg, Calif. Dr. B has been in China since September 1943 working with American liaison units in the field. He has tended both Chinese American soldiers for the past two years and is now awaiting orders to be returned to the United States. Dr. Bernstein graduated from the University of Illinois College of Medicine, Chicago, in 1935 and entered the service April 20, 1941.

Captain John P. Lee

Capt. John P. Lee, formerly of St. Louis, was recently awarded the Bronze Star and a second Presidential Unit citation. He received the Bronze Star "for meritorious achievement in connection with military operations against the enemy on Jolo Islands from April 9 to May 7, 1945." Dr. Lee graduated from Washington University School of Medicine, St. Louis, in 1941 and entered the service Sept. 1, 1942.

MISCELLANEOUS

ITALIAN MEDICAL NUTRITION MISSION

The Italian Medical Nutrition Mission, sponsored jointly by the Unitarian Service Committee and the Congregational Christian Service Committee, is now set up and working in Italy under the United Nations Relief and Rehabilitation Administration.

The purposes of the mission are fourfold: (1) to find out the actual nutritional conditions and needs among the starving people of Italy, (2) to help UNRRA evaluate and improve its feeding program in that country, (3) to make a detailed scientific study of the results of a carefully supervised experimental feeding program for individuals who have suffered prolonged malnutrition, a study that may establish scientific procedures for all further feeding programs, and (4) to help local medical groups in their rehabilitation programs and to encourage their continued scientific study.

The American staff consists of:

Dr. Charles R. Joy, executive director, Unitarian Service Committee.
Robert P. Kellerman, Pacific School of Religion, assistant executive officer.

Dr. Elmer Sevringhaus, University of Wisconsin, co-director and internist.

Dr. Maurice B. Visscher, University of Minnesota, co-director and physiologic nutritionist.

Dr. Ashton C. Cuckler, University of Minnesota, parasitologist.

Ruth M. Flumerfelt, Wisconsin General Hospital, dietitian.

Dr. Frank Gollan, U. S. P. H. S., assistant pediatrician.

Dorothy Hagedorn, R.N., technologist.

Dr. Ancel Keys, University of Minnesota, biochemist and nutritionist.
Marjorie Knowlton, University of Minnesota Medical School, technician.

Dr. Emma Kynos, general medical practitioner, assistant internist.
Dr. Maury Massler, University of Illinois College of Dentistry, dental research, assistant director.

Dr. James Perkins, State of New York Department of Health, epidemiologist.

Dr. Isaac Schour, University of Illinois College of Dentistry, dental research director.

Dr. Lester Sontag, director of Samuel S. Fels Research Institute, pediatrician.

Dr. Ernest L. Stebbins, commissioner of New York City Department of Public Health, epidemiologist.

Northern Italy was found to be in noticeably better condition than southern Italy. In Milan the 1,700 bed hospital was adequately supplied with enough milk, eggs and vegetables, the only dietary shortage being cereals.

A team of Italian doctors and students was trained, and a tuberculosis survey was started on May 21 in Fondi, a community of 17,000. Four thousand persons were examined in twelve days at the clinic. Malaria was almost universal, judging from the history and examination of this 25 per cent sample of the population. The major nutritional problems were rickets, calories and poverty. The findings indicated an overall incidence of tuberculosis below 2 per cent among the 4,000 persons examined. No malaria was found in this community. This team conducted surveys in Sardinia during August and in the southern part of Italy during September.

In a superficial examination of the teeth of returning Italians from Germany, it was found that 62 per cent of these people had less than two carious or missing teeth, although few of them had ever used a tooth brush or had dental care of any sort.

The intensive study program at the clinics of the University of Naples has become increasingly well knit. The entire American staff has now arrived, and daily staff lunches, American and Italian, are a feature that adds greatly to the smooth running of the program and cooperation of the personnel. Miss Flumerfelt, the dietitian, produces an appetizing menu that demonstrates what can be done with UNRRA foods. Bread and macaroni are produced from the specially improved flour that was part of the design of the project.

In the clinics it has been necessary to clarify the differences in diagnosis of nutritional diseases that are due to differences in terminology and to the relative isolation of Italian doctors from research for past years. Finally there came an opportunity to treat a baby who was very nearly dead from prolonged malnutrition plus final dehydration resulting in intoxication. The Italians consented to Dr. Gollan's use of plasma, which had been brought through the courtesy of Sharp and

Dohme, and the results amazed the Italians, thereby opening new paths for study, teaching and prevention of previously unsolved difficulties.

Under the direction and planning of Dr. Sontag the team providing vitally important x-ray films of all children was developed, checking on rickets and on the maturity of the children as shown by bone growth. There are indications of a hitherto unrecognized problem child in Italy in whom stunted growth and development cause a new type of bone disease. A method of approach toward diagnosis and treatment of this condition is being worked out, and a chart system has been organized whereby difficulties will be eliminated in comparing data on these children with those studied in American hospitals. A study of the effects of undernutrition on newborn babies is also under way, suggested by the professor of obstetrics at the university and carried out by joint American and Italian personnel.

One of the great needs of these Italian doctors is for books and journal contacts with the United States, which they are eager to reestablish. An effort is being made to supply them with a nucleus of most needed textbooks, and we are hoping to have journal exchanges set up. One evidence of their being out of touch was an extended debate in staff meeting in which they dilated greatly on the vital merits of mother's milk. It finally became apparent that they were defending their practice of overdiluting cow's milk, since they do not understand the modern methods of safe and adequate babies' formulas. To achieve safety they are sometimes nearly starving the babies. The staff is looking for opportunities to demonstrate to the Italian doctors and through them to the Italian mothers the appropriate methods for modifying cow's milk in such a way that babies will be able to grow normally.

VETERANS

NEW VETERANS ADMINISTRATION
HOSPITALS

As part of the program announced on October 18 by General Omar N. Bradley, Administrator of Veterans' Affairs, for the construction of nineteen new Veterans Administration hospitals with a total of 11,100 beds, thirteen of these hospitals with 9,550 beds are located near medical schools. They are:

Location	Number of Beds	Near
New Haven, Conn.	500	Yale University School of Medicine
Albany, N. Y....	1,000	Albany Medical College
Buffalo	1,000	University of Buffalo School of Medicine
Newark, N. J....	1,000	Columbia University College of Physicians and Surgeons Long Island College of Medicine New York Medical College, Flower and Fifth Avenue Hospitals New York University College of Medicine Cornell University Medical College
Baltimore	300	Johns Hopkins University School of Medicine
Washington, D. C.	750	George Washington University School of Medicine Georgetown University School of Medicine
Louisville, Ky....	750	University of Louisville School of Medicine
Iowa City.....	500	State University of Iowa College of Medicine
Omaha	500	University of Nebraska College of Medicine Creighton University School of Medicine
New Orleans....	500	Tulane University of Louisiana School of Medicine Louisiana State University School of Medicine
Oklahoma City...	1,000	University of Oklahoma School of Medicine
Cincinnati	750	University of Cincinnati College of Medicine
Gainesville, Fla..	1,000	University of Florida Medical School

The October 18 list provided also for additions to fifteen existing hospitals and four domiciliary facilities with a total of 4,176 new beds.

Funds for the new hospitals and additions are being requested for the current fiscal year (1946). They are part of the overall 29,100 bed program approved by President Truman on August 4. The remainder of the program, which will be announced later, will be requested for the 1947 fiscal year.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Bartlett, Haywood S., Capt., 207 Thorn Pl., Montgomery.
Baumhauer, Charles A., Major, Whistler.
Beatty, Thomas D., Capt., Cullman.
Britton, William R., Capt., 120 Bankhead Ave., Montgomery.
England, Francis T., Capt., 50 S. Franklin St., Mobile.
Kahn, Sigmond A., Major, 3005 Canterbury Lane, Birmingham.
Roberts, Edward H., Capt., Choccolocco.
Shamblin, R. D., Capt., 1013 Myrtlewood Dr., Tuscaloosa.
Warren, Claude M. Jr., Capt., Jackson.

Arizona

Fife, Karl L., Capt., Duncan.
Gwinn, Frank W., Major, Box 1511, 300 Gila St., Yuma.
Hurianek, Zdenka A., Capt., 15 E. Monroe St., Phoenix.
Hussong, Ruland W., Capt., 15 E. Monroe, Phoenix.
McNally, Joseph P., Capt., 208 Grove Ave., Prescott.
Oliver, Claude H., Lt. Col., 800 11th St., Douglas.

Arkansas

Armstrong, Howard M., Capt., Baptist State Hosp., Little Rock.
Buckelew, Hollis H., Major, Maumelle Ord. Wks., Little Rock.
Burton, Francis M., Major, 711 Prospect Ave., Hot Springs.
Carrington, Hamilton K., Capt., Magnolia.
Connolly, William B., Capt., Solomon Bldg., Helena.
Donaldson, Joy K., Major, 2107 N. Palm St., Little Rock.
Fulmer, Doyle W., Capt., 819 22 Donaghey Bldg., Little Rock.
Gartrell, Luther S. Jr., 1st Lt., Ward.
Grace, Jesse K., Lt. Col., Belleville.
Harwell, Carl M., Jr., Lt. Col., Osceola.
Henry, Lewis M., Major, 602 Garrison Ave., Fort Smith.
Hirst, Ottis G., Lt. Col., Prescott.
Hyatt, Cyril L., Capt., 701 Main St., Little Rock.
Imes, Elvin D., Capt., 317 Pecan St., Texarkana.
Jackson, Jabez F., Major, Walnut Ridge.
Kinley, James D., Major, Beebe.
Kirby, Henry V., Capt., 1001 West Nicholson, Harrison.
Madding, G. F., Major, 607 Merchants Bank Bldg., Ft. Smith.
Russell, Allen R., Lt. Col., 521 National Bldg., Pine Bluff.
Sanderlin, Joseph H., Lt. Col., Little Rock.
Sisco, Friedman, Major, Springdale.
Smith, John W., Major, 2115 N. Palm St., Little Rock.
Wickard, Charles P., Capt., 2809 Gaines St., Little Rock.

California

Aldrich, Albert T., Capt., Childrens Hosp., Los Angeles.
Argo, William L., Major, 944 61st St., Oakland.
Armanini, George B., Major, 498 Arques St., Sunnyvale.
Ball, Franklin I., Lt. Col., 6253 Hollywood Blvd., Los Angeles.
Berne, Clarence J., Lt. Col., 2023 Redcliff St., Los Angeles.
Bine, Rene Jr., Capt., 15 26th Ave., San Francisco.
Blasdel, Edward K., Capt., Tulare Co. Hosp., Tulare.
Bruce, Robert A., Major, 1423 Virgil Pl., Los Angeles.
Casey, Earle A., Capt., 917 Bridge Rd., San Leandro.
Churchill, Ambrose S., Capt., 1247 Brunswick, S. Pasadena.
Cohn, Roy B., Lt. Col., 106 N. Lucerne Blvd., Los Angeles.
Colby, Elliott G., Col., 2457 Willow St., San Diego.
Cole, Edwin R., Major, 3164 16th St., Sacramento.
Corbin, Damon E., Capt., 4176 Arden Way, San Diego.
Coulter, James D., Major, Western Pacific Hosp., Portola.
Crane, Norman F., Capt., 627 S. Normandie Ave., Los Angeles.
De Fries, William A., Capt., P. O. Box 14, Alamo.
Demakopoulos, Nick, Capt., 320 W. Poplar St., Stockton.
Dryfoos, Herbert L., Major, 167 Beaumont Ave., San Francisco.
Eaker, Alan B., Lt. Col., Santa Fe & Eight St., Carmel.
Escamilla, Roberto F., Major, 3325 Jackson St., San Francisco.
Evans, W. L., Major, 3044, The Mall, Wyvernwd, Los Angeles.
Everingham, Sumner, Col., 400 29th St., Oakland.
Farthing, Thomas E., Major, 23 2d. Ave., San Mateo.
Firpo, John J., Capt., 500 Hanigan St., San Francisco.
Galgiani, John V., Capt., 17 17th Ave., San Francisco.
Gordon, Gerald, Capt., 5410 Wilshire Blvd., Los Angeles.
Greenfield, Michael B., Capt., U.S. Vet's Facility, Palo Alto.
Hamilton, R. S., Lt. Col., 5351 Eagledeale Ave., Los Angeles.
Helsley, Gordon F., Major, 800 Monterey Blvd., San Francisco.
Hersh, Julius, Capt., 117 N. Arden Blvd., Los Angeles.
Ice, William H., Major, 1200 N. State St., Los Angeles.
Jackemy, Edward J., Major, 1615 Broadway, Oakland.
Jacobson, Julian C., Major, 457 Laurel St., Santa Cruz.
Johnson, V. E., Major, 137 Granville Way, San Francisco.
Johnson, Cyril H., Capt., 424 East Tulare St., Tulare.

California—Continued

Johnson, Phillips, Lt. Col., 290 Sea Cliff Ave., San Francisco.
Kelso, Raymond W., Major, 117 E. 8th St., Long Beach.
Kennedy, William J., Major, 5487 Masonic Ave., Oakland.
Kirby, Edwin G., Capt., 390 Douglass St., San Diego.
Klein, Rudolph, Capt., 2942 Hillcrest Dr., Los Angeles.
Lawrence, Norris B., Capt., 1206 Norman Rd., Colton.
Layden, Milton, Capt., 8646 S. Vermont Ave., Los Angeles.
Lee, Russel Van A., Col., 440 Geron, Stanford U.
Lerner, Milton, Capt., % Olive View Sanatorium, Olive View.
McClintock, Edward A., Capt., Vet Adm Facility, Palo Alto.
McPharlin, James H., Capt., Salinas Nat. Bank, Salinas.
Meyer, Vincent S., Capt., Box 366, Los Altos.
Miller, Palmer D., Capt., 181 Hayes Ave., Dinuba.
Mote, Clayton, Lt. Col., 472 Dewey Blvd., San Francisco.
Nelson, James H., Capt., 2035 Zonal Ave., Los Angeles.
Nethery, William M., Major, 155 W. College St., Covina.
O'Connor, Michael J., Lt. Col., 145 Borel Ave., San Mateo.
O'Connor, Vincent D., Capt., 114 Sequoia St., Manteca.
Parker, David M., Major, 1595 28th Ave., San Francisco.
Pawley, Ralph E., Major, 422 King St., Indio.
Payne, Royal C., Major, 6235 Hollywood Blvd., Los Angeles.
Peterson, M. H. A., Maj., 417 E. Montecito Ave., Sierra Madra.
Potter, Henry G., Capt., 101 Main St., Winters.
Richardson, G. L., Major, 4438 Wortser Av., North Hollywood.
Rijhoff, Victor E., Capt., 823 Flood Bldg., San Francisco.
Rosoff, Leonard, Capt., Apt. 4, 120 S. Flores, Los Angeles.
Saeltzer, Dudley V. Jr., Major, 1124 47th St., Sacramento.
Salvatore, Max L., 1st Lt., Sutter Club, Sacramento.
Schlichtmann, Carl E., Capt., 230 Woolsey St., San Francisco.
Soraco, Charles V., Capt., Placerville.
Stickler, J. H., Major, 4031 Hampstead, Flintridge, Pasadena.
Treadwell, Robert N., Capt., Stanislaus Co. Hosp., Modesto.
Tupper, W. R., Major, Olive View Sanatorium, Olive View.
Walker, Ralph S., Major, 1034 Harvard Rd., Piedmont.
Weddle, Robert P., Capt., 114 Taylor St., Roseville.
Weiles, George E., Capt., 3908 First St., Riverside.
Wood, Clarence L., Capt., 1245 Oak Ave., St. Helena.

Colorado

Adams, Blair S., Major, 615 W. Mulberry St., Ft. Collins.
Albi, Roger V., Capt., 670 Columbine St., Denver.
Brown, Robert N., Capt., 615 Martindale Dr., Denver.
Cooper, Henry L., Major, 821 Madison St., Denver.
Cullyford, James S., Lt. Col., 1633 Endore St., Denver.
Dixon, Chalmer D., Lt. Col., Fitzsimmons Gen. Hosp., Denver.
Ivers, William M., Lt. Col., 805 West 4th St., Loveland.
Liggett, Robert S., Major 2083 Clermont, Denver.
Luparello, Thomas G., Major, Fitzsimmons Gen. Hosp., Denver.
Mechler, Emmett A., Major 1960 Glencoe St., Denver.
Whitney, Roger S., Major, 23 E. Pikes Ave., Colorado Springs.
Wolfe, Joseph, Major, 850 S. Franklin St., Denver.

Connecticut

Andrus, Oliver B., Capt., 32 Daytona Ave., Devon.
Bergendahl, Harold A., Capt., RFD 8, Norwichtown.
Buccheri, Francis S., Capt., 35 Brighton St., New Britain.
Burack, Jason O., 1st Lt., 51 Quantard Ave., S. Norwalk.
Duffy, Leo T., Major, 214 Franklin Ave., Hartford.
Fox, James C. Jr., Lt. Col., 140 Davis St., Hamden.
Hebard, George W., Lt. Col., East Avenue, New Canaan.
Lataif, George, Major, 96 Park Ave., Danbury.
Piccolo, Pasquale A., Major, 286 Humphrey St., New Haven.
Sherman, Saul H., Capt., 24 Second St., Stamford.
Rose, Samuel A., Capt., 25 Bedford St., Stamford.
Tovell, Ralph M., Col., 1897 Asylum Ave., West Hartford.

Delaware

Angevine, Daniel M., Major, RFD 2, Shipley Rd., Wilmington.
McDaniel, Joseph S. Jr., Major, Dover.
Reardon, William T., Capt., 207 W. 29th St., Wilmington.

District of Columbia

Bageant, William E., Capt., 6305 7th St. N.W., Washington.
Bauersfeld, Emil H., Capt., 3726 Conn. Ave., Washington.
Crockett, Edward D., Capt., 1827 1st St. N.W., Washington.
Dobkin, Joseph J., Major, 2656 15th St. N.W., Washington.
Evans, John A., Lt. Col., Washington.
Farrell, Malcolm J., Lt. Col., Off. of Surg. Gen. Washington.
Fierst, C. E., Major, 4210 Mathewson Dr. N.W., Washington.
Godfrey, James T. J., Capt., 1140 N. Capitol St., Washington.

PHYSICIANS SEPARATED FROM SERVICE

District of Columbia—Continued

Johnson, Phillip T., Major, 6111 Dix St. NE., Washington.
Krause, E. A., Lt. Col., 3361 Stephenson Pl. NW., Washington.
Kuhn, John J., Major, 1710 Lamont St. NW., Washington.
McKittrick, Jack, Capt., 707 E. Van Trees St., Washington.
Smith, John B., Capt., 812 Jefferson NW., Washington.
Tolstoi, George, Lt. Col., 1835 Eye St., N.W. Washington.
Wilner, Paul R., Major, 3726 Connecticut Ave., Washington.

Florida

Adams, Daniel M., Capt., Panama City.
Bernstein, William H., Capt., 4565 Bay Rd., Miami Beach.
Brown, Harold O., Lt. Col., 215 Madison St., Tampa.
Farrer, Frederick E., Major, 535 N.E. 68th St., Miami.
Fishbein, Isadore L., Capt., 1622 Euclid Ave., Miami Beach.
Harrell, Henry L., Lt. Col., 918 Oklawaha Ave., Ocala.
Hewlett, Frank W., Lt. Col., 2406 SW 23d Terrace, Miami.
Hodes, Robert, Major, 2500 3d Ave., N. St. Petersburg.
McDaniel, Thomas F., Major, 701 Park Ave., Sanford.
Manson, A. M., Capt., 4185 Lakeshore Blvd., Jacksonville.
Neals, Huerta C., 1st Lt., 1545 W. 5th St., Jacksonville.
Park, Charles L., Major, 109 W. 18th St., Sanford.
Rowell, John P., Capt., 544 Halls Court S., St. Petersburg.
Saltz, Nathan J., Capt., 1651 Laura St., Jacksonville.
Stamps, Walker, Lt. Col., 4142 McGirts Blvd., Jacksonville.
Stead, Vergil G., Capt., Gen. Del. Naples.
Watt, Edward C., Major, 613 Greenleaf Bldg., Jacksonville.
Zimmerman, Paul A., Major, 2324 SW 23d St., Miami.

Georgia

Atkinson, Harold C., Lt. Col., 206 Corbin Ave., Macon.
Barfield, William E., Lt. Col., 402 Covington St., Jackson.
Battle, Lee H. Jr., Major, 402 E. 11th St., Rome.
Blumberg, Max M., Lt. Col., 1251 Fairview Rd., N.E. Atlanta.
Boland, Frank K. Jr., Major, 252 Peachtree Circle, Atlanta.
Boland, J. H., Major, 124 Peachtree Mem. Dr. N.W., Atlanta.
Bos, Howard, Major, ACL Hosp., Way-Cross.
Brown, Felix B., Major, 17 E. 52d St., Savannah.
Cross, John B., Major, 2605 Dellwood Dr. N.E., Atlanta.
Dellinger, Raider W., Major, 2 Sherwood Rd., Rome.
Durham, Bon M., Capt., University Hospital, Augusta.
Good, William H. Jr., Capt., Toccoa.
Hagan, James H., Capt., Rockmart.
Hester, Marion W., Capt., Grady Hosp., Atlanta.
Hill, Lyndon M. Jr., 1st Lt., 224 Boulevard NE., Atlanta.
Leonard, William P., Major, Talbotton.
McGinty, Howard C., Major, Statesboro.
Mosley, Hugh G., Lt. Col., 133 Carnegie Way, N.W. Atlanta.
Owens, Bennett G., Col., 1306 N. Patterson St., Valdosta.
Pierce, Lovick W., Lt. Col., 1003 Atlantic Ave., Waycross.
Rawlings, William, Capt., 310 Smith St., Sandersville.
Rhyne, Walter P., Lt. Col., 631 Fifth Ave., Albany.
Simmons, Shelton C., Jr., Major, 107 S. Church St., E. Point.
Smith, Frederick A., Jr., 1st Lt., McRae.
Smith, Harold M., Major, Garrard Ave., R & 4, Savannah.
Strickler, C. W. Jr., Major, 21 Brookhaven Dr. NE., Atlanta.
Temples, Andrew K., Major, 407 7th St., Augusta.
Wood, Richard H., Lt. Col., 1657 Harvard Rd., Atlanta.

Illinois

Aguila, Fernando I., Capt., 801 N. Wells St., Chicago.
Aronow, Julius, Capt., 5731 N. Kimball Ave., Chicago.
Baker, Alonzo N., Major, 500 E. Allen Ave., Marion.
Baldwin, R. S., Lt. Col., 916 U. S. Post Office Bldg., Chicago.
Barak, H. G., Capt., % L. Wygodny, 5354 Winthrop, Chicago.
Baughman, Jack L., Capt., 1324 N. Park Dr., E. St. Louis.
Bedard, Robert E., Major, 650 S. Harrison Ave., Kankakee.
Beers, Morrison D., Capt., 2340 Lincolnwood Dr., Evanston.
Binder, Paul, Capt., 1444 S. Trumbull Ave., Chicago.
Bleich, Joseph, Capt., 1026 Greenleaf Ave., Evanston.
Bleier, Robert S., Capt., 4830 N. St. Louis Ave., Chicago.
Boeke, Emmert, Capt., Winslow.
Bolla, Elder L., Major, 9224 Cottage Grove Ave., Chicago.
Bolman, Ralph M., Major, 1180 E. 63d St., Chicago.
Boros, Harold H., Major, 1337 W. Fargo Ave., Chicago.
Bowen, Wilbur L., Major, 4500 N. Sheridan Rd., Peoria.
Bowers, Daniel E., Capt., 1801 Moss Ave., Peoria.
Brenner, Frank T., Major, 2003 Jersey St., Quincy.
Brooks, Lewis C., Major, 27½ W. Stephenson St., Freeport.
Burgess, John P., Capt., 2411 38th St., Rock Island.
Caliendo, Joseph E., Capt., 732 Bittersweet Pl., Chicago.
Cameron, Wayne F., Capt., 1220 Central St., Evanston.
Carter, Clifford L., Major, 417 E. Prospect Ave., Ottawa.
Ching, Tai T., Capt., 2227 Wentworth Ave., Chicago.

Illinois—Continued

Coyle, Joseph T., Capt., 7842 Creiger Ave., Chicago.
Crimson, Lester C., Major, Lying-In Hosp., Chicago.
Dashiell, Grayson F., Capt., 1209 Sherwin Ave., Chicago.
Decker, Virgil O., Capt., 313½ Ferry St., Metropolis.
Dent, Roy F. Jr., Capt., 244 E. Pearson St., Chicago.
Diamondstone, A. H., Capt., 1139 N. Spaulding Ave., Chicago.
Doherty, Chester C., Lt. Col., 1235 Astor St., Chicago.
Drenckhahn, C. H., Lt. Col., 602 W. University Ave., Urbana.
Ersfeld, John G., Capt., 5130 Montrose Ave., Chicago.
Espenscheid, John S., Capt., 1220 N. Logan Ave., Danville.
Ferrell, Robert V., Capt., 2020 Illinois Ave., Eldorado.
Fitz, Frederick W., Lt. Col., 423 Blackhawk St., Chicago.
Gurvey, Julius A., Capt., 6423 N. Bell Ave., Chicago.
Houghton, Earl J., Capt., St. Francis Hosp., Peoria.
Hughes, Edgar O., Capt., 507 E. Chalmers St., Champaign.
Knaus, William E., Major, 636 N. 22d St., East St. Louis.
Lassar, Gilbert N., Major, 1st Nat'l Bk. Bldg., Springfield.
Leach, John E., Capt., 800 Indiana Ave., Mendota.
Manning, John J., Major, 6442 Wayne Ave., Chicago.
Markoutsas, George C., Capt., 1608 W. Cermak Rd., Chicago.
Nigro, S. J., Capt., 3645 W. Chicago Ave., Chicago.
Platt, Alfred J., Capt., 506 Oakdale St., Chicago.
Rosack, Henry P., Capt., 1246 Noble St., Chicago.
Ryan, David C., 1st Lt., 306 Atlantic, Peoria.
Young, Louis C., Major, 1119 W. Main St., Taylorville.

Indiana

Adkins, Harold C., Major, 250 W. Hampton Dr., Indianapolis.
Anderson, Charles P., Major, 269 Rutledge, Gary.
Blazey, Arthur G., Major, 600 George St., Washington.
Butterfield, Robert M., 1st Lt., 1002 W. Gilbert St., Muncie.
Clark, William R., Capt., 4115 Beaver Ave., Fort Wayne.
Close, Walter D., Major, 423 W. 43d St., Indianapolis.
Combs, Stuart R., Major, 2620 N. 10th St., Terre Haute.
Connoy, Leo F., Capt., 1615 Carrollton Ave., Indianapolis.
Davis, Parvin M., Lt. Col., Paoli Pike, New Albany.
Derhammer, George L., Major, Box 12, Brookston.
Dorrance, Thomas O., Capt., 228 E. South St., Bluffton.
Engle, David E., Major, 1076 W. Michigan, Indianapolis.
Erdel, Milton W., Lt. Col., 306 People Life Bldg., Frankfort.
Faul, Henry J., Major, 602 S. E. Riverside Ave., Evansville.
Felson, Benjamin, Major, Indiana University, Indianapolis.
Ferrara, Joseph F. Jr., Capt., 744 Polk St., Gary.
Fickas, Dallas, 1st Lt., 927 E. Mulberry St., Evansville.
Firestone, Ben, Capt., 508 Odd Fellows Bldg., South Bend.
Firestone, Milton H., Capt., 3919 S. Harrison Blvd., Ft. Wayne.
Fox, Francis H., Capt., 417 Division St., Bicknell.
Fuson, Wenfred J., Capt., 108 N. Wood Blvd., Greencastle.
Gambill, William D., Major, 1911 Kessler Blvd., Indianapolis.
Grillo, Donald, Major, 1832 N. Adams St., South Bend.
Grisell, Ted L., Capt., 1242 W. N. Y., Indianapolis.
Harrison, Benjamin L., Major, 233 Bundy Ave., Newcastle.
Hall, Bernard R., Capt., City Hospital, Indianapolis.
Hallam, Franklin T., Col., 410 N. Meridian St., Indianapolis.
Hash, John S., Capt., 202 E. 3d St., Williamsport.
Havice, Jay F., Lt. Col., 3721 Indiana Ave., Ft. Wayne.
Hippensteel, R. R., Major, 5242 N. Illinois St., Indianapolis.
Johnson, Thomas W., Capt., 3239 N. Illinois St., Indianapolis.
Kabel, Robert N., Capt., City Hosp., Indianapolis.
Kahan, Harry Leo, Major, 738 Broadway, Gary.
Kauffman, Sidney A., Capt., 3337 College Ave., Indianapolis.
Kemp, John T., Capt., 631 Pine St., Michigan City.
Kendall, Forest M., Capt., 597 W. Adams St., Alexandria.
Kilgore, Byron Jr., Capt., 35 W. Marion St., Danville.
Leser, Ralph U., Major, 23 E. Ohio St., Indianapolis.
Lewis, James F., Major, 28 E. Union St., Liberty.
Lybrook, William B., Major, RFD 2, Galveston.
McCormick, C. O. J., 1st Lt., 4041 Wash. Blvd., Indianapolis.
McIntyre, James M., 1st Lt., 201 Blue Ride, Indianapolis.
McKeeman, Donald H., Major, 1615 Ardmore Ave., Ft. Wayne.
Martin, Floyd S., Capt., 127 E. Lincoln Ave., Goshen.
Miller, Robert J., 1st Lt., 830 S. 8th St., Evansville.
Modjeski, Raymond J., Capt., 233 Lawndale St., Hammond.
Morris, Marion H., Capt., 1106 N. Dearborn St., Indianapolis.
Nason, Robert A., Capt., 107 S. Harrison, Garrett.
Nelson, Paul L., Capt., 330 W. 7th St., Anderson.
Nelson, Raymond E., Capt., 1340 Sunnymede Ave., South Bend.
Norris, Ernest B., Capt., Brown St., Middlebury.
Oak, David D., Capt., La Crosse.
Over, John H., Major, 2403 S. Calhoun St., Fort Wayne.
Perrin, Kermit F., Lt. Col., 2701 S. Anthony Blvd., Ft. Wayne.
Peyton, Frank W., Capt., 625 Kossuth St., Lafayette.

PHYSICIANS SEPARATED FROM SERVICE

Indiana—Continued

Radiojelic, Sava M., Major, Portland.
Richardson, Charles L., Major, 506 Pontiac St., Rochester.
Romack, Howard H., Major, Greenfield.
Scherb, Burton E., Major, Clay City.
Sharp, John L., Major, 607 E. Main St., Crawfordsville.
Siewert, Otto L., Capt., 408 North St., Logansport.
Sigmund, William B., Lt. Col., 1102 Union St., Columbus.
Speas, Robert C., Capt., 611 E. 1st St., Bloomington.
Thorne, Charles E., Capt., 1918 Walnut St., Newcastle.
Topoligus, James N., Capt., 208 S. Clark St., Bloomington.
Traver, Perry C., Col., 1010 Riverside Dr., South Bend.
Washburn, Richard N., Lt. Col., Rensselaer.
Washburn, William W., Major, 131 DeHart St., W. Lafayette.
Weber, J. G. S., Lt. Col., % B. F. Sedwick, RR1, Centerpoint.
White, James V., Lt. Col., 50 N. 7th St., W. Terre Haute.
Whitlock, Merle E., Major, 2530 Riveria Drive, Mishawaka.
Widmeyer, Chester P., Capt., % W. E. Wilder, Winslow.
Wilson, Oliver R., Capt., 242 W. Broadway, Shelbyville.
Wytenbach, John E., Lt. Col., 5509 Kenwood, Indianapolis.
Zimmerman, Harold, Capt., 1454 Bellemeade Ave., Evansville.

Iowa

Anderson, Edward N., Major, 828 N. Gilbert St., Iowa City.
Beaumont, Fred H., Major, Bennett Bldg., Council Bluffs.
Bergstrom, Albin C., Capt., 104 N. 4th St., Missouri Valley.
Brinkhous, K. M., Lt. Col., Med. Laboratories Bldg., Iowa City.
Decker, Charles E., Major, 3 Temple Lane, Davenport.
Down, Howard I., Lt. Col., 4317 Perry Way, Sioux City.
Grossman, Edward B., Capt., Orange City.
Hogan, Paul W., Major, 25 W. Main St., Waukon.
Jacobs, Carl A., Lt. Col., Univ. Hosps. Iowa City.
Jenkins, George D., Lt. Col., 705 N. 5th St., Burlington.
King, Ross C., Capt., 2114 N. Second St., Clinton.
Lee, Robert W., 1st Lt., 812 4th St., Nevada.
Maiden, Snyder D., Major, 203 Bluff St., Council Bluffs.
Marsh, Gerald S., Major, 424 S. Summit St., Iowa City.
Meyer, Milo G., Lt. Col., 407 Masonic Bldg., Marshalltown.
Peggs, Harold J., Major, 720 20th St., Des Moines.
Pulliam, Robert L. Jr., Major, Univ. Hosp., Iowa City.
Randall, Charles C., Major, Univ. of Ia. Hosp. Iowa City.
Rosebrook, Lee E., Major, 903 Murray Drive, Ames.
Scanlan, George C., Capt., 922 7th St., DeWitt.
Staggs, William A., Major, 7½ S. Dubuque St., Iowa City.
Standeven, James W., Capt., Oakland.
Stegman, Jacob J., Major, Over 125 E. Main, Marshalltown.
Tinley, Robert E., Major, 219 Turley Ave., Council Bluffs.
Vaubel, Ellis K., Capt., % C. A. Christenson, Peterson.
Wicks, Ralph L., Major, Winterset.
Zarchy, Alex C., Major, 3440 Grand Ave., Des Moines.

Kansas

Baker, Joseph H., Capt., 7th & Main, La Crosse.
Brian, Robert M., Major, 417 N. Topcka Ave., Eldorado.
Carbaugh, Kenneth W., Capt., 5530 Reeds Rd., Mission.
Funk, Edward D., Capt., 1711 Van Buren St., Topeka.
Grove, W. E., Capt., Axtell Clinic, 209 E. Broadway, Newton.
Hamilton, Tom R., Capt., 2002 Olathe Blvd., Kansas City.
Hammel, Seth A., Lt. Col., 114 W. 8th St., Topeka.
Harvey, Ernest E., Lt. Col., 710 So. 10th St., Salina.
Haukenberry, Everett F., Major, Stockdale.
Helwig, Ferdinand C., Lt. Col., 2230 W. 52d St., Kansas City.
Ingham, Walton C., 1st Lt., 1714 Ill. St., Lawrence.
Kenoyer, William R., Capt., Hugoton.
McVay, Roy B., Capt., 1503 Fifth St., Clay Center.
Mothershead, John L., Major, Denton.
Newman, Robert L., Capt., Bell Memorial Hosp., Kansas City.
Snyder, Howard E., Col., 1021 E. 9th Ave., Winfield.
Treger, Newman V., Capt., 1231 N. 4th St., Independence.
Vesper, Vernon A., Capt., Hill City.
Wall, David R., Major, 1104 N. Market St., Wichita.

Kentucky

Air, Clements W., Lt. Col., 220 Uphill St., Ludlow.
Archer, George F. Jr., Capt., 322 Kenwood Dr., Louisville.
Bieber, Herbert F., Major, 2821 Ashland Ave., Covington.
Bizot, Byron, Major, Louisville.
Boneta y Rios, Tomas L. E., Capt., Lexington Rd., Richmond.
Bryan, James W., Capt., 1601 Ky. Hotel, Louisville.
Bushart, Glynn F., Major, Fulton.
Cantey, Samuel O. Jr., Capt., Julius Marks San., Lexington.
Chappell, Claud W., Major, 3340 Robin Rd., Louisville.
Cooper, Arthur L., Major, Kentucky Theatre Bldg., Somerset.

Kentucky—Continued

Drye, James C., Capt., 1415 S. 4th, Louisville.
Fischer, Kerwin A., Lt. Col., 2924 Field Ave., Louisville.
Foltz, Louis M., Major, 414 Browns Lane, Louisville.
Frehling, Joseph M., Major, 561 Garden Dr., Louisville.
Gaines, Frank M. Jr., Capt., 901 Highland Ave., Carrollton.
Gose, William C., Capt., Pikeville.
Gragg, Logan, Jr., Capt., RR 4, Lexington.
Hall, DeLou P., Major, 2023 Typer Lane, Louisville.
Hall, Michael M., Capt., Campbellsville.
Heizer, William L. Jr., Lt. Col., 141 Romany Road, Lexington.
Johnston, Coleman C., Lt. Col., 253 N. Broadway, Lexington.
Marshall, Jennings B., Major, 908 Brown Bldg., Louisville.
Miller, Alfred O., Major, 2321 Alta Ave., Louisville.
Olinger, William A., Capt., 110 6th St., Corbin.
Peterson, Gilman P., Capt., Cave City.
Petro, George J., 1st Lt., 3400 Lexington Rd., Louisville.
Pirkey, Everett L., Major, 1315 S. 3d St., Louisville.
Pittenger, Byron N., Capt., 249 Houston Ave., Paris.
Poe, Jean A., Capt., 510 W. State Line St., Fulton.
Prindle, Clair G., Capt., 17 E. Third St., Maysville.
Pryor, Will R., Major, 539 Garden Drive, Louisville.
Rich, Murray L., Major, 33 E. 7th St., Covington.
Robbins, Ballard F., Capt., Berea.
Rudd, Russell R., Capt., Fulton.
Towery, B. T., Capt., Box 86, Coll. Hts. Stat., Bowling Green.
Tyler, William L. Jr., Lt. Col., 403 E. Third St., Owensboro.
Weaver, Edgar S., Lt. Col., 309 Main St., Fulton.
Welte, Fred H., Major, N. E. C. 9th & Isabella Sts., Newport.

Louisiana

Akenhead, Walton R., Lt. Col., 2622 Jasmine St., New Orleans.
Burns, Cornelius B., Capt., Charity Hosp., New Orleans.
Cali, Salvatore J., Capt., 114 E. Cate St., Hammond.
Campbell, Edmond C., Capt., 320 N. 3d., Monroe.
Coleman, James A., Lt. Col., Box 142, Jena.
Digiglia, Lucas L., Capt., 2207 Woodruff St., Lake Charles.
Folk, Benjamin P. Jr., Major, Tallulah.
Gage, Idys M., Col., 1430 Tulane Ave., New Orleans.
Kelly, George P., Capt., 627 Kirby Place, Shreveport.
Knoepp, Louis F., Lt. Col., Gowen San., Line Ave., Shreveport.
McConnell, Hiram A., Major % Bunkie Clinic, Bunkie.
Norfleet, William J., Col., 835 Prospect Ave., Shreveport.
Oxford, Theodore M., Major, 1833 Line Ave., Shreveport.
Plum, John B., Major, 4237 Fontainebleu, New Orleans.
Rabinowitz, Carl H., Major, Charity Hosp., New Orleans.
Schramel, Anton J., Major, 8 Bolten Ave., Alexandria.
Simonton, Robert M., Major, 101½ S. Grand St., Monroe.

Maine

Anderson, Donald L., Capt., 8 Park St., Caribou.
Blaisdell, Elton R., Lt. Col., 12 Deering St., Portland.
Tibbetts, Otis B., Capt., R2A W. Auburn Rd., Auburn.
Wilson, Harry M., Major, Bethel.

Maryland

Brown, Webster H., Lt. Col., Johns Hopkins Hosp., Baltimore.
Curtis, Leo M., Capt., Glenn Dale Sanatorium, Glenn Dale.
Dann, Daniel I., Major, 4401 Marble Hall Rd., Baltimore.
Helms, Samuel T., Lt. Col., 305 Wendover Rd., Baltimore.
Jarvis, Jack R., Capt., Sheppard & Pratt Psychiatric Hosp., Towson.
McDonald, George, Lt. Col., 844 N. Carey St., Baltimore.
Mansfield, William K., Major, 1508 Bolton St., Baltimore.
Mirkin, Abraham J., Major, 117 S. Centre St., Cumberland.
Moran, John A., Major, S. Baltimore GH., Baltimore.
Roman, Paul W., Capt., Glenn Dale Sanatorium, Glenn Dale.
Shelley, Harry S., Lt. Col., 3849 Roland Ave., Baltimore.
Smith, Robert C., Major, Baltimore City Hosp., Baltimore.
Tuerk, Isadore, Major, Spring Grove State Hosp., Catonsville.
Wagner, Philip S., Major, 700 Cathedral St., Baltimore.
Whitridge, J. Jr., Major, Wdbrk Lane, Govans PO, Baltimore.
Wise, Walter D., Col., 8 Charlcote Pl., Baltimore.

Massachusetts

Abodeely, Robert A., Major, 530 Grafton St., Worcester.
Barry, John M., Lt. Col., 332 Haverhill St., Lawrence.
Beecher, Henry K., Lt. Col., 1144 Brush Hill Rd., Milton.
Bergan, Carl A., Capt., Huntington St., Chester.
Berkowitz, Joseph, Major, 32 Prospect St., W. Bridgewater.
Best, Lynwood K., Lt. Col., 306 N. Main St., Fall River.
Bianco, Harvey H., Capt., 23 Wall St., North Adams.
Blais, Wilfred A., Major, 186 Elm St., Pittsfield.
Blesoff, Benjamin, Capt., 326 Highland Ave., Somerville.

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts—Continued

Boyer, Samuel H., Major, 77 Church St., Winchester.
Bragdon, Joseph H., Lt. Col., 111 Milton St., Milton.
Bryant, Mason David Jr., Capt., 31 Harvard St., Lowell.
Burns, John E., Major, 30 Franklin St., Milford.
Byrnes, Leo A., Lt. Col., 50 Elliott St., Holyoke.
Cincotti, John J., Major, 422 Pleasant St., Belmont.
Clark, Richard J., Major, 52 Salisbury St., Winchester.
Cogan, Michael A., Capt., 121 Chestnut St., Springfield.
Collins, James F., Lt. Col., 36 Pleasant St., Gloucester.
Crapolicchio, Dante V., Capt., 25 Shelby St., Worcester.
Criscitiello, Modestino, Lt. Col., 96 Pollock Ave., Pittsfield.
DeLong, Robert B., Capt., 18 Elmwood St., Worcester.
DePrizio, Carl J., Lt. Col., 43 N. Main St., Mansfield.
Fagan, Frederick J., Major, 759 Harrison Ave., Boston.
Flo, Spencer C., Major, 15 James St., Greenfield.
Glendy, Robert E., Lt. Col., 24 Garden Rd., Newton.
Gould, Malvin, Capt., 351 Centre St., Jamaica Plain.
Hermanson, Louis, Major, 15 Alton Pl., Brookline.
Hickey, William F. Jr., Major, 12 Edgehill Rd., Winchester.
Hurwitz, Alfred, Major, 27 Allenwood St., West Roxbury.
Hyatt, Gilbert T., Lt. Col., Scituate.
Mayo, Walter V., Capt., Box 94, Washington St., Duxbury.
Moloney, William C., Major, 39 Bay State Rd., Boston.
Mooney, Daniel Leo, Capt., 164 Colfax St., Fall River.
Morse, Chester W., Capt., 932 N. Main St., Brockton.
Murray, John M., Lt. Col., 82 Marlborough St., Boston.
Oddy, John G., Capt., 477 Essex St., Lawrence.
Poirier, Theophane M., Capt., 378 Lincoln, Marlboro.
Powers, John T. H., Major, 19 Highland Ave., Greenfield.
Rabnowitz, Henry, Capt., 45 W. Park St., Brockton.
Radcliffe, Ernest J., Major, 67 Butterfield Terrace, Amherst.
Segel, Arnold L., Major, 1959 Commonwealth Ave., Boston.
Skoog, Allan P., Major, Maple Ave., Rutland.
Smith, Jasper A., Capt., 122 Kent St., Brookline.
Staffier, Anthony R., Capt., 87 Electric Ave., W. Somerville.
Starbuck, George W., Capt., 26 Evans Way, Boston.
Stevens, Joseph E., Capt., 254 Rogers Ave., West Springfield.
Tuohy, Edward L., Major, 17 Longfellow Rd., Cambridge.
Yankauer, A. Jr., Major, Massachusetts Gen. Hosp., Boston.
Yasuna, Elton R., Capt., 99 Vassar St., Worcester.
Young, Morris N., Major, 4 Fern St., Lawrence.
Zeltzman, Israel, Capt., 591 Morton St., Dorchester Center.

Michigan

Ashley, Lowell B., Col., 8162 La Salle Blvd., Detroit.
Askwig, LeRoy C., Lt. Col., 2201 E. Jefferson Ave., Detroit.
Baron, Benzion C., Major, Munising.
Bausch, Richard G., Major, 77550 Hanover, Detroit.
Berry, Robert E. L., Major, 2201 Jefferson St., East, Detroit.
Birndorf, Leonard, Capt., 17566 Northlawn, Detroit.
Blair, Herbert M., Capt., Gen. Del., Sault Ste. Marie.
Brown, Byron P., Capt., 116 Pearl St., Charlotte.
Brown, Frederick W. Jr., Lt. Col., Box 347 Watervliet.
Buzzard, Walter D., Capt., 315 Wood St., Chesaning.
Caldwell, John E., Lt. Col., 18104 Oak Dr., Detroit.
Cooper, Benjamin F., Capt., 8858 E. Outer Dr., Detroit.
Daly, Byrne M., Major, 207 Ellery, Jackson.
Diehluis, Bert, Capt., 42 Cass St., South Haven.
DiLoreto, Panfilo C., Capt., 3331 Charlevoix Ave., Detroit.
Douglass, Clair L., Lt. Col., 7629 Dexter Blvd., Detroit.
Eschbach, Joseph W., Major, 22375 Garrison, Dearborn.
Freedman, John, Capt., 1925 Longfellow Ave., Detroit.
Goryl, Stephen V., Capt., 3039 Crane St., Detroit.
Harper, Jesse T., Major, 8162 Jefferson Ave., E., Detroit.
Hershey, Noel J., Capt., 1630 Cedar St., Niles.
Hodgman, Albert B., Major, 1518 Henderson Dr., Kalamazoo.
Kauffman, William H., Major, 14741 Mack Ave., Detroit.
Keppen, Ford F., Major, 406 S. Elm St., Three Oaks.
Koestner, Paul A., Capt., 2642 Norton Drive, Kalamazoo.
Kuhn, Richard F., Major, 1700 Junction, Detroit.
Lentini, Nicholas, Capt., Cheboygan.
Levy, Albert H., 1st Lt., 51 Oakwood Manor, Grand Rapids.
Ley, Wilfred S., Capt., 1314 Jerome, Lansing.
Licker, Reuben R., Capt., 1020 River Rd., Marysville.
MacLean, Kenneth F., Major, Univ Hosp., Ann Arbor.
Martner, E. E., Major, 695 Washington Rd., Grosse Pointe.
Meyers, Maurice P., Major, 16879 Baylis Ave., Detroit.
Molnar, Stephen K., 1st Lt., 2601 S. Washington, Lansing.
Reid, Wesley G., Major, 19945 Briarcliff, Detroit.
Rice, Robert B., Capt., 17437 Palmer, Melvindale.
Rutledge, Samuel H., Capt., 171 Huron Ave., Rogers City.
Shari, Lewis E., Capt., U.S. Vet. Hosp., Ft. Custer.

Michigan—Continued

Schutz, William Jack, Major, 103 Jewel St., Munising.
Scott, John A., Capt., 122 N. Thompson St., Jackson.
Scott, Robert R., Capt., 22 S. Adams, Ypsilanti.
Shelton, Carl F., Capt., 630 Merrick Ave., Detroit.
Siem Sen, Walter J., Major, 1009 Roseland Ave., Kalamazoo.
Sorock, Milton L., Major, 2202 Eaton Tower, Detroit.
Southwick, Wayne A., 1st Lt., 362 E. Main St., Springport.
Spiro, Adolph S., Capt., 12265 E. Outer Drive, Detroit.
Taylor, Nelson M., Capt., 16930 Village Lane, Grosse Pointe.
Van Loo, Jacob, Major, 422 Pleasant St., Belding.
Wallen, Leroy J., Capt., 420 Dawson St., Sault Ste., Marie.
Warnke, Robert D., Major, Receiving Hosp., Detroit.
Wurz, John F., Lt. Col., 44 Baynton Ave. NE., Grand Rapids.

Minnesota

Alexander, Harlan A., Capt., 3244 5th Ave., S. Minneapolis.
Baker, George S., Major, 814 5th St. S.W., Rochester.
Beck, Norman R., Capt., Mayo Clinic, Rochester.
Borg, Joseph F., Col., 798 Dayton Ave., St. Paul.
Creighton, Ralph H., Lt. Col., 4916 Stevens Ave., Minneapolis.
Hebbel, Robert, Lt. Col., Dept. Path. Univ. Minn. Minneapolis.
Kirklin, Byrl R., Col., 102-110 2d St., S.W. Rochester.
Kremen, Arnold J., Capt., 527 Oak St., S.E. Minneapolis.
Leighton, Robert S., Major, Gen. Del., Evansville.
Samuelson, Leopold G., Major, Mankato.
Schamber, Walter F., 1st Lt., Parkers Prairie.
Schmidt, George F., Lt. Col., 102 2d Ave., S.W. Rochester.
Snyder, John M., Lt. Col., Rochester.
Tweedy, John A., Capt., 730 5th St., S.W. Rochester.

Mississippi

Acree, Frank M., Major, 110 N. Shelby, Greenville.
Biorn, Carl L., Major, 603 5th St., Jackson.
Buckingham, Dewitt A., Capt., 3611 7th St., Meridian.
Dorsey, Charles F., Capt., 129 N. Church St., Brookhaven.
Harrell, Felix J., Major, 115 Collins, Biloxi.
Lacey, Charles F., Capt., Thomastown.
Levy, Julius L., Major, 504 West 2nd St., Clarksdale.
McCarthy, Alphonsus M., Lt. Col., Electric Mills.
Merriam, Lucius B., Major, P.O. Box 355, Waynesboro.
Nebinger, Rankin A., Major, Lexington.
Rouse, H. K. Jr., Major, 940 Second St., Gulfport.
Vanlandingham, David J., Capt., 38 Calhoun St., W. Point.

Missouri

Burford, Edgar H., Major, 8045 Crescent Dr., St. Louis.
Chalkley, Judson I., Capt., 1409 South St., Lexington.
Connor, Samuel W., Lt. Col., Camdenton.
Greene, Maurice L., Lt. Col., RRH Box 382 Lomay.
Hanser, Samuel A., Lt. Col., 3424 Longfellow Blvd., St. Louis.
Herbert, Charles T., Major, Sylvan Lane, Cape Girardeau.
Merrill, Robert L., Major, 5629 Enright Ave., St. Louis.
Napper, Marvin L., Major, 698 Cherokee, Springfield.
Neavles, Jackson C., Capt., Washington Univ., St. Louis.
Schwartz, Henry G., Lt. Col., 5065 Waterman Blvd., St. Louis.
Stacy, Winton T., Lt. Col., 2716 Francis St., St. Joseph.

Montana

Burton, Frank H., Capt., 210 Higgins Ave., Missoula.
Gans, Paul J., Major, Attix Clinic, Lewistown.

Nebraska

Azorin, Louis A., Lt. Col., 665 N. 56th Ave., Omaha.
Crook, Glenn D., Capt., 5342 Cleveland Ave., Lincoln.
Drasky, Stanley, Major, 409 S. Jeffers St., North Platte.
Kaika, Adolph J., Lt. Col., Scotia.
Moran, Clarence S., Lt. Col., 307 S. 50th St., Omaha.
Teal, Philip R., Capt., Orthopedic Hospital, Lincoln.

New Hampshire

Almquist, Fred A., Major, 70 Court St., Keene.
Beaudet, Robert O., Capt., 220 Prospect St., Franklin.
Brislin, William W., Major, Mechanic St., Alstead.
Elkavich, Frank D., Major, School St., Troy.
Fox, Nathan S., Major, Vet. Adm., Manchester.
Greenan, John C., Capt., Exeter.
Hallisey, Dennis L., Major, 12 Rockland St., Nashua.
Meany, John H., Capt., 37 Main St., Box 15, Hinsdale.
Monahan, William D., Capt., Whitefield.
Rihl, Walter A., Capt., 25 Messenger St., Lebanon.
Wlodkoski, John B., Capt., 438 E. High St., Manchester.

PHYSICIANS SEPARATED FROM SERVICE

New Jersey

Alexander, Stewart F., Lt. Col., 12 S. Main St., Park Ridge.
 Altschul, Frank J., Major, 177 Garfield Ave., Long Branch.
 Applebaum, Irving L., Lt. Col., 31 Lincoln Park, Newark.
 Barbano, Alfred J., Capt., 224 Talmadge St., New Brunswick.
 Baruch, Rudolph J., Major, 202 Stiles St., Elizabeth.
 Bauman, Everett O., Capt., 17 Hillside Ave., Newark.
 Betcher, Albert M., Major, 135 Belmont Ave., Jersey City.
 Bighiani, Urban R., Capt., 606 80th St., N. Bergen.
 Borow, Louis S., Major, 934 Park Ave., Plainfield.
 Bristol, Frank E. Jr., Major, Raritan Arsenal, Metuchen.
 Cohen, Meyer M., Capt., 582 E. 25th Ave., Paterson.
 Cosgrove, Robert A., Lt. Col., 93 Fairview Ave., Jersey City.
 Cunningham, Charles Jr., Capt., 7 & Wood Sts., Vineland.
 Dershewitz, Irving S., Capt., 835 Montgomery St., Jersey City.
 Durr, Walter J., Capt., 217 10th St., Hoboken.
 Dyer, Edward H., Capt., 102 S. Victoria Ave., Ventnor.
 Elwell, Alfred Maul Jr., 1st Lt., 407 Cooper St., Camden.
 Ettelson, Lawrence N., Capt., 103 Lincoln Park, Newark.
 Falcone, Nicholas A., Capt., 68 Watchung Ave., N. Plainfield.
 Farr, Walter J., Major, 288 Griggs Ave., Teaneck.
 Fessman, J. W., Capt., 114 E. Elements Bridge Rd., Rummensede.
 Friedmann, Gustav, Major, Bonnie Burn San., Scotch Plains.
 Geiger, Harold C., Capt., Macopin Rd., West Milford.
 Harris, Wm. O., Capt., 32 N. New Jersey Ave., Atlantic City.
 Hatcher, George A., Col., Essex County Hosp., Cedar Grove.
 Hood, George B., Major, 2432 39th St., Camden.
 Irving, Henry C., 1st Lt., 13 Warner Ave., Jersey City.
 Judy, Kenneth, Major, 132 E. Lincoln Ave., Roselle Park.
 Kearney, John F., Capt., 228 Hilton Ave., Maplewood or 1874
 Springfield Ave., Maplewood.
 Kehr, Herbert L., Capt., 9209 Blvd., North Bergen.
 Kornfield, Norman B., Capt., 45 Church St., Montclair.
 Lobban, Robert B., Col., 13 Fairmount Ter., Jersey City.
 Maggio, Rosario J., Capt., 550 Carleton Rd., Westfield.
 McGlade, T. H., Capt., 1225 Walnut Ave., West Collingwood.
 Mccray, Paul Jr., Major, 315 Thomas Ave., Riverton.
 Megibow, Harold J., Capt., 43 Arch St., Ramsey.
 Mores, Herbert R., Capt., 65 Bergen Ave., Ridgefield Pk.
 Morris, Nathan, Capt., 413 John St., Plainfield.
 Nestor, John O., Capt., 36 Halstead St., Newton.
 Pellicane, A. J., Capt., 183 Livingston Ave., New Brunswick.
 Perneti, Anthony M., Capt., 245 The By-Way, Ridgewood.
 Pilloni, Louis, Capt., 91 Beach St., Bloomfield.
 Pons, Carlos A., Major, 501 Grand Ave., Asbury Park.
 Rauschenbach, Paul E., Major, 225 Broadway, Paterson.
 Riehlan, Alfred R., Capt., 173 Third St., Newark.
 Rifkin, Irving M., Capt., 419 Park St., Upper Montclair.
 Rosenberg, Max, Capt., 1585 Wyndmoor Ave., Hillside.
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ORGANIZATION SECTION

Council on Medical Education and Hospitals

MEDICAL SCHOOL DECELERATION AND THE PHYSICIAN VETERAN

A Statement from the Council on Medical Education and Hospitals

The medical schools of the country anticipated the increased wartime need for physicians and inaugurated the accelerated program in medical education. Enrolments were increased. The program has been maintained successfully despite great losses in faculty. The medical schools submitted to the inadequate premedical programs of the armed forces and to the educationally undesirable 9-9-9 program believed to be necessary in the emergency. The medical schools have cooperated willingly and vigorously in every effort to win the war.

Now after four years, with the war won, there are responsibilities which should take precedence over the accelerated training of medical officers. These are (1) provisions for the education of physician veterans and (2) restoration of a sound educational program. Most if not all schools indicated at the recent Pittsburgh meetings of the Association of American Medical Colleges that they desire to return to the prewar program at once: to commence their 1946-1947 session in the fall, even though the 1945-1946 academic year ends in April, as is the case in most schools. A number of institutions propose to employ three to six months of this period for the education of physician veterans, particularly along externship lines. Such schools point out that the absence of juniors and seniors from the school will free the clinical facilities for the veteran physician programs.

Since large numbers of physician veterans are seeking such work, and many more will apply by spring, the schools should be permitted to develop such plans. The Navy does not object. The Army hopes to continue the Army Specialized Training Program into 1947 for all men now in the program; it is unwilling that schools under contract should decelerate. In effect, this is an arbitrary compulsion on the schools and on the vast majority of medical students, since only about 20 to 25 per cent of medical students in June 1946 will remain in the A. S. T. P. The medical schools have repeatedly adjusted to the desires of the Army. Cannot the Army now adjust to the new responsibilities of the schools, and more particularly to the needs of physician veterans seeking further education? Such needs are more compelling than the probable need for replacements two years hence. The plan outlined would not affect the supply of replacements for medical officers before that time.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Federal Program for Hospital Construction

The Senate Committee on Education and Labor has favorably reported a revised version of the Hill-Burton hospital construction bill, S. 191. As reported, the bill would provide for a five year hospital construction program and authorize annual appropriations of \$75,000,000 for each of the fiscal years 1947-1951 inclusive plus unappropriated and unexpended balances. It eliminates the \$5,000,000 authorization that appeared in the original bill for state administrative expenses in carrying out state plans. A new provision in the reported bill denies to any federal officer or employee the right to exercise any supervision or control over the administration, personnel, maintenance or operation of any hospital with respect to which any funds are expended under the federal measure.

Veterans Administration

The House Committee on World War Veterans' Legislation has been holding hearings on a bill introduced, by request, by Representative Rankin, Mississippi, to establish a Department of Medicine and Surgery in the Veterans Administration, H. R. 4225. This bill, it is understood, was introduced at the request of the Veterans Administration and proposes a reorganization of the medical department in an effort to make available a better quality of medical care to veterans. Among other things, it would authorize the Administrator of Veterans' Affairs, on the recommendation of the Surgeon General, to employ physicians on a full time, part time or fee basis at such rates of pay as may be prescribed. This employment would be in addition to the commissioned or noncommissioned personnel of the proposed corps.

Representative Dirksen, Illinois, has introduced H. R. 4363, a bill providing special facilities for handicapped veterans. It would authorize the Administrator of Veterans' Affairs to establish not to exceed ten special schools to be known as United States veterans' universities to enable veterans handicapped by physical disabilities effectively to take advantage of the educational privileges extended by the G. I. Bill of Rights.

Discharge of Physicians

A bill introduced by Representative Traynor, Delaware, H. R. 4475, would provide for the release from active service of every commissioned officer serving in the Medical Corps, Dental Corps or Veterinary Corps of the Army or the Medical Corps of the Navy or the Navy Dental Corps who (a) has attained the age of 36 years and whose active service has been of a duration of two years or more since Sept. 16, 1940, (b) has performed active service outside the continental limits of the United States or in Alaska for one year or more since Sept. 16, 1940 or (c) during World War II was for thirty days or more in the hands of the enemy as a prisoner of war.

Control of Hay Fever

Representative Lane, Massachusetts, has introduced H. R. 4279, proposing an appropriation of \$50,000 for expenditure, under the direction of the Surgeon General of the United States Public Health Service, for research with respect to the cause and cure of hay fever.

Coming Medical Meetings

American Medical Association—House of Delegates, Chicago, Dec. 3-6. Dr. Olin West, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, Chicago, Dec. 10-11. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Association on Mental Deficiency, Cleveland, Nov. 28-Dec. 1. Dr. Neil A. Dayton, Box 51, Mansfield Depot, Conn., Secretary.

American Ophthalmological Society, Hot Springs, Va., Nov. 12-14. Dr. Walter S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

American Society of Anesthetists, New York, Dec. 12-13. Dr. McKinnie L. Phelps, 745 Fifth Ave., New York 22, Secretary.

American Society of Tropical Medicine, Cincinnati, Nov. 12-15. Dr. Joseph S. D'Antoni, Tulane Ave., New Orleans 13, Secretary.

International College of Surgeons, U. S. Chapter, Washington, D. C., Dec. 7-8. Dr. Louis J. Gariopy, 16401 Grand River Avenue, Detroit, Secretary.

North Pacific Pediatric Society, Portland, Ore., Dec. 1. Dr. Aldis B. Johnson, Cobb Bldg., Seattle 1, Washington, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Nov. 26-29. Dr. Elmer R. Musick, 512 Medical Arts Bldg., Oklahoma City, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-16. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Southern Medical Association, Cincinnati, Nov. 12-15. Mr. C. P. Loran, Empire Bldg., Birmingham 3, Alabama, Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 4-6. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

COLORADO

State Election and Meeting.—Dr. Archie C. Sudan, Krenmling, was chosen president-elect of the Colorado State Medical Society at its annual meeting in Denver, September 21. Dr. George A. Unfug, Pueblo, was inducted into the presidency. Dr. George H. Gillen, Denver, was elected vice president, and Dr. Bradford J. Murphey, Denver, was chosen secretary for a three year term. Dr. William T. H. Baker, Pueblo, was named delegate to the American Medical Association for a two year term. Among the speakers at the recent session were:

Dr. Lewis G. Allen, Kansas City, Value of the Scout Film of the Abdomen.

Dr. Theodore E. Beyer, Denver, Sialography.

Col. John Murray, M. C., Fort Logan, Management of Anxiety State of Returnees.

Allen E. Walker, P. A., Surg. (R) U. S. Public Health Service, Denver, Rapid Treatment Center Method of Handling Syphilis.

Dr. Edward R. Murgage and Marion Rymer, both of Denver, Belle Bonfils Blood Bank.

The program also included symposiums on hepatitis, upper respiratory infections and care of amputations following operation. There was also a clinic on unusual skin cases presented by Dr. Arthur R. Woodburne, Grand Rapids, Mich. Dr. John R. Evans, Denver, was toastmaster at the banquet, at which the guest speaker was Robert L. Stearns, LL.D., Boulder, on "Postwar Science in the Light of Our War Experiences."

ILLINOIS

Oldest Practicing Physician in State.—Dr. Edmund B. Montgomery, Quincy, is said to have practiced medicine in Illinois longer than any other physician, according to recent newspaper reports. In a statement to the press Dr. Harold Swanberg, Quincy, said that Dr. Montgomery has been in active practice for sixty-seven years, that he is the oldest member of the Adams County Medical Society, joining it in 1879, and that he has been a member of the Illinois State Medical Society longer than any other physician in the state. Dr. Montgomery was born in St. Louis May 11, 1858 and graduated at Jefferson Medical College of Philadelphia in 1878.

Chicago

Leon Jacobson Named Associate Dean.—Dr. Leon O. Jacobson, assistant professor of medicine at the University of Chicago School of Medicine, has been appointed associate dean of the university's Division of Biological Sciences. Dr. Jacobson, who graduated at the medical school in 1939, has been a member of the university's staff since 1941.

George A. Wiltrakis Named to Mental Hygiene Post.—Lieut. Col. George A. Wiltrakis, M. C., on October 15 was appointed by the governor, Dwight H. Green, as deputy director of the mental hygiene service of the Illinois Department of Public Welfare. Dr. Wiltrakis, who graduated at Loyola University School of Medicine, Chicago, in 1929, has been on terminal leave from the Army since September 29, according to the *Chicago Sun*. He succeeds Dr. Conrad S. Sommer, Chicago, who went to St. Louis (THE JOURNAL, September 15, p. 221).

Meeting of Bacteriologists.—The Society of Illinois Bacteriologists will hold its fall meeting November 16 at Huyler's Restaurant, 310 South Michigan Avenue. The speakers will include:

Henry J. Gorcea, Ph.D., Production and Dehydration of Bakers' Yeast.
Howard J. Shaughnessy, Ph.D.; Albert Milzer, Ph.D.; John L. Neal, Ph.C., and Dr. Sidney O. Levinson, Studies on Irradiated Polyvalent Bacillary Dysentery Vaccine.

Dr. Preston E. Harrison, Effect of Chemotherapy on the Development of Immunity.

Joseph Zichis, Ph.D., Catherine E. Lemke, M.S., and Dr. Shaughnessy, Occurrence of Psittacosis-like Viruses in Chicago Pigeons.

Dr. Guy P. Youmans, Culture Cycle of Virulent Human Type Tubercle Bacilli.

Lying-In Hospital Observes Fiftieth Anniversary.—A program of clinics and papers formed the official observance of the fiftieth anniversary of the Chicago Lying-In Hospital and Dispensary of the University of Chicago October 29.

Morning clinics were conducted by Dr. William J. Dieckmann, chief of service at Chicago Lying-In clinics, by Dr. Fred L. Adair, professor emeritus of the university and former chief of service, and four members of the Lying-In staff: Dr. Morris E. Davis, Dr. Henry C. Hesseltine, Dr. Edith L. Potter and Dr. James R. Willson. Among speakers on an afternoon program were:

Dr. Frederick C. Irving, Boston, A Blood Bank for a Lying-In Hospital.

Dr. Henricus J. Stander, New York, Teaching of Obstetrics and Gynecology.

Dr. Edwin C. Hamblen, Durham, N. C., Some Contributions of Endocrinology to Obstetrics and Gynecology.

Dr. Norman F. Miller, Ann Arbor, Mich., Hysterectomy—Therapeutic Necessity or Surgical Racket?

At dinner in the evening a check for more than \$300,000 for research in the fields of eclampsia and puerperal fever was presented to Robert M. Hutchins, chancellor of the University of Chicago, by the board or directors of the hospital, where the research will be carried out.

Solomon Memorial Research Foundation.—The Dr. Jerome D. Solomon Memorial Research Foundation has recently been created to "conduct scientific investigation in the field of medicine and surgery for the relief of human suffering, irrespective of race, color or creed." The foundation is named for Captain Solomon, who died of scrub typhus at Cape Sansapor, New Guinea, September 16, aged 28. Dr. Solomon had graduated at the University of Illinois College of Medicine in 1941, becoming in the same year a lieutenant in the medical corps of the Army of the United States. He entered active duty in 1942. Joseph D. Solomon, father of Dr. Solomon, is honorary president of the new foundation. Other officers include M. Z. Holland, president; N. R. Levin, vice president; Dr. Joseph L. Wilkey, Chicago, vice president; Irv Kupcinet, Chicago *Daily Times* columnist, secretary; Zena L. Graham, assistant secretary, and William Lakritz, treasurer. Members of a medical advisory board are Drs. Morris Fishbein, chairman, Ludvig Hektoen, Andrew C. Ivy, Raymond W. McNealy, Karl A. Meyer and Samuel J. Hoffman. Research will be carried out at the Hektoen Institute, which is affiliated with the foundation. Fellowships will be awarded in projects recommended by the medical advisory committee. The foundation is now conducting a membership drive at \$10 a person, and voluntary contributions are requested.

Conference on Tuberculosis.—"Control of Tuberculosis in the Metropolitan Area" will be the theme of a conference at the red lacquer room, Palmer House, November 13-14. The conference is sponsored by the Institute of Medicine of Chicago in cooperation with the Chicago Medical Society, the Tuberculosis Institute of Chicago and Cook County, the Council on Social Agencies of Chicago, and the Chicago Tuberculosis Society. Among the speakers will be:

Dr. Daniel J. Glomset, Des Moines, History and Development of Tuberculosis.

Dr. Herman E. Hilleboe, Washington, D. C., Case Finding.

Col. Midian O. Bousfield, M. C., Fort Huachuca, Arizona, Tuberculosis in Negroes.

Dr. Harry J. Corper, Denver, Fundamental Information on the Mechanism of Specific Tuberculosis Immunity.

Dr. Francis M. Pottenger Jr., Monrovia, Calif., Dietary Aspects of Tuberculosis.

Dr. William F. Petersen, Chicago, Season and Tuberculosis.

Dr. Bruce H. Douglas, Detroit, Sanatorium Facilities.

Dr. Robert G. Bloch, Chicago, The Role of General Hospitals and Clinics and the Private Physician.

Bleeker Marguette, Cincinnati, The Problem of Housing on Tuberculosis and Health.

Metta Bean, Milwaukee, The Tuberculous Patient.

Homer J. Buckley, Chicago, Education of Public Authorities and the Laity in Tuberculosis.

Dr. Arthur H. Parmelee, Oak Park, Ill., Tuberculosis in Children.

Dr. Jay A. Myers, Minneapolis, Tuberculosis as a School Problem.

Mabel E. Rugen, Michigan, The Practical Application of Instructional Methods in Schools.

Dr. Maxim Pollak, Peoria, Ill., Tuberculosis in Industry from the Viewpoint of the Physician in Industry.

Dr. Leo Price, New York, The Problem of Tuberculosis Industry from the Viewpoint of Labor.

L. E. Roark, Management's Interest in Tuberculosis Control in Industry.

Dr. Jerome R. Head, Chicago, Principles and Organization of Treatment.

Dr. Camillo E. Volini, Chicago, Pneumothorax Therapy, Including Ambulatory Pneumothorax Treatment.

Dr. William E. Adams, Chicago, Surgical Treatment of Tuberculosis.

Dr. Paul T. Chapman, Detroit, Follow-Up Problems, Including the Chronic Open Case.

Dr. Harry A. Pattison, Livingston, N. Y., Rehabilitation.

The program will also include a series of panel discussions on public financing of tuberculosis programs, the problem of the tuberculous war veteran, immunization with the bacillus Calmette-Guérin and the education of medical students and physicians in tuberculosis.

KENTUCKY

John Phair Named Health Officer of Louisville.—Dr. John J. Phair, associate professor of epidemiology, Johns Hopkins University School of Hygiene and Public Health, Baltimore, has been appointed professor and head of the department of public health and bacteriology at the University of Louisville School of Medicine and health director of Louisville and Jefferson County. He succeeds Dr. Hugh R. Leavell, Louisville, who has been given a position with the Rockefeller Foundation as assistant director for the medical sciences (*THE JOURNAL*, August 18, p. 1179). Dr. Phair is now in Europe as adviser to Major Gen. N. C. Stayer, director of public health, welfare and education of the United States Control Council in Germany and will assume his new work the first of the year. He graduated at the University of Cincinnati College of Medicine in 1929. Dr. Gracie R. Rowntree, Louisville, has been acting director of the city and county health unit since Dr. Leavell left Louisville last November.

LOUISIANA

Research on Enzymes.—The Smith, Kline and French Company has made a grant of \$5,000 to the Alton Ochsner Medical Foundation for research in chemistry, according to Dr. Thomas P. Findley Jr., New Orleans, the research director of the foundation. This fund will be used to continue the work on enzymes which is being done by Dr. Otto Schales, New Orleans, director of the chemical research laboratory.

MISSOURI

Personal.—Dr. Curtis H. Lohr, who recently returned to his activities as superintendent and medical director of the St. Louis County Hospital, Clayton (*THE JOURNAL*, August 18, p. 1179), is serving temporarily as health officer of Clayton. —Dr. Raymond A. Ritter has been named chairman of the Cape Girardeau board of health.

Industrial Survey in Franklin County.—The Missouri state industrial hygiene service has recently inaugurated a series of surveys, the first of which is being conducted in Franklin County. The object of the new survey is to determine to what extent a comparatively rural county such as Franklin can support an industrial medical program. The Franklin survey is being carried out by the state industrial hygiene service in cooperation with the Franklin County Medical Society. Dr. A. Link Koven, Jefferson City, is chief of the industrial hygiene service and W. Scott Johnson is chief public health engineer. Dr. Koven recently gave a talk before the Franklin County Medical Society on "Industrial Medicine and Its Potential Importance to Franklin County."

NEW YORK

Ninety Years of Age.—Dr. Charles E. Lane, Poughkeepsie, observed his ninetieth birthday August 16. The Poughkeepsie *New Yorker* reported that Dr. Lane is still taking care of office calls.

Black Market Charged in Surgery Dressings.—John F. X. McGohy, United States attorney, announced yesterday the filing of a nineteen count criminal information charging that Irving Tow, 405 East Fifty-Fourth Street, former general and executive manager of the American White Cross Laboratories, Inc., 52 Webster Avenue, New Rochelle, diverted 627,281 yards of finished cotton piece goods that had been acquired for military surgical requirements. According to the *New York Times* the information alleges that the merchandise was sold by Tow between August 1943 and May 1944 to manufacturers of women's and children's garments for \$61,385, or \$10,790 above the ceiling prices.

Commonwealth Fund to Finance Study on Hospital Care.—The Commonwealth Fund has given fifteen hospitals in five counties of New York \$275,000 a year for five years to finance an educational and building program of outlying hospitals, according to the *Rochester Chronicle*, October 14. Formation of a regional council with the Rochester Hospital Council as a nucleus will be the first step in setting in motion the plan, which is expected to become operative about January 1. The hospitals that applied to the fund for the approval of this region were Bath Memorial, Bath; Bethesda and St. James Mercy, Hornell; Brockport Central, Brockport; Dansville General, Dansville; Clifton Springs Sanitarium, Clifton Springs; Frederick Ferris Thompson, Canandaigua; Geneva General, Geneva; Soldiers and Sailors Memorial, Penn Yan, and Genesee, Highland, Park Avenue, Rochester Gen-

eral, St. Mary's and Strong Memorial, Rochester. Of the total amount of the award, \$75,000 yearly is to be used for administration and educational programs and \$200,000 as grants-in-aid to member hospitals in smaller communities for building programs and purchase of equipment. The educational program will be perhaps the primary function of the new council and will be on a postgraduate level. It will include organization and administration of a continuous postgraduate program for physicians and will include clinical conferences, short refresher courses and one to three year residencies and fellowships, depending on demands from the standpoint of content and time. The plan provides for a possible rotation of interns and residents among the hospitals throughout the region, a refresher course for graduate nurses, postgraduate nurse training in war management, operating room and delivery room courses, institutes and consultation and exchange opportunities for laboratory technicians, x-ray technicians, dietitians, medical record librarians, admitting officers and development of opportunities for more extensive affiliation in undergraduate nursing. Also provided is extension of consultation services in such fields as x-ray, pathology and anesthesia and for hospital administrative and departmental problems. The program also calls for meetings and regional institutes for nonprofessional as well as professional hospital personnel. The Rochester Hospital Council began as an administrators' conference body shortly after World War I and continued as such until its incorporation in December 1939.

New York City

Dental School Loses Rating on Merger with Medical School.—The council on dental education of the American Dental Association is reported to have withdrawn its rating of the School of Dental and Oral Surgery of Columbia University as a result of the recent merger of the institution's medical and dentistry faculties (*THE JOURNAL*, March 10, p. 606).

Institute Named for Caroline Zachry.—The Institute of Human Development will be renamed in memory of the late Caroline B. Zachry, Ph.D., who at the time of her death in February was director of the bureau of child guidance of the city board of education. The institute was established by Dr. Zachry in 1939 to bring together teachers, doctors, nurses, social workers and other professional persons, to help them to learn from one another and to work together for children. It has carried on research, supervised field studies, presented lecture courses and held workshops and seminars for advanced students in education, medicine and social work. Dr. Zachry resigned as head of the institute in 1942 to direct the city bureau. It is also planned to publish the proceedings of a one day conference on adolescents this fall as a memorial to Dr. Zachry.

Ernest Stebbins Goes to Johns Hopkins.—Dr. Ernest L. Stebbins, commissioner of health since 1942, has been appointed professor of public health administration and assistant director of Johns Hopkins University School of Hygiene and Public Health, Baltimore, *Science* reports. Dr. Stebbins graduated at Rush Medical College, Chicago, in 1929 and received his M.P.H. degree at Johns Hopkins in 1932. In 1931 he was epidemiologist with the Virginia State Department of Health and health officer in Henrico County from 1932 to 1934, when he went to the New York State Department of Health as epidemiologist. In 1937, after a period as district state health officer, he became director of the division of communicable diseases of the state health department and subsequently assistant commissioner of health. From 1940 to 1942 he was professor of epidemiology of the Columbia University College of Physicians and Surgeons.

NORTH CAROLINA

Grants for Research.—The medical relations division of Camel Cigarettes has given the Bowman Gray School of Medicine, Winston-Salem, an additional grant of \$6,000 to support research on tobacco by William A. Wolff, Ph.D., associate professor of pathology. This grant brings to a total \$22,651 awarded for the support of this work. A grant of \$2,500 has been received from the John and Mary R. Markle Foundation to aid the research conducted by Dr. David Cayer, Durham, assistant professor of medicine, on the study of nutrition. Dr. Cayer formerly was associated with Dr. Julian M. Ruffin of the Duke University School of Medicine, Durham, in the study of vitamin levels in various deficiency states. Dr. Cayer will

continue study along the same lines under this grant. A grant has been received from the American Foundation for Tropical Medicine to aid in the publication of studies done by the department of medicine on lepromin skin reactions.

NORTH DAKOTA

Appointments to Health Department.—Three staff appointments to the state department of health have been made by Dr. George F. Campana, Bismarck, state health officer. Miss Bernardine Cervinski will be director of health education, Mr. Fred J. Baker has been assigned as chemist in the public health laboratory at Bismarck and Mr. Richard M. Ludemann will be lay venereal disease investigator for the division of preventable diseases.

New District Health Unit.—The Southwestern District Health Unit, comprising the counties of Golden Valley, Billings, Slope, Bowman, Hettinger and Adams, has been created with headquarters in New England with Dr. Mary E. W. Soules, Dickinson, as health officer. According to an announcement from Dr. George F. Campana, Bismarck, state health officer, the district board of health includes Mr. M. S. Byrne, Bowman, president; Mrs. Clara Brown, Amidon; L. S. Riley, dentist, New England; Mr. Lewis Odland, Beach; Mr. A. E. Boicourt, Medora, and Dr. John L. Dach, Hettinger.

PENNSYLVANIA

Philadelphia

Pigeons Declared "Prejudicial to Public Health."—The Philadelphia Department of Health has adopted a resolution declaring the city's public pigeons to be "prejudicial to public health," and the public health committee of the city council has amended an ordinance which will permit city officials to trap and kill the birds. From 35 to 48 per cent of a group of pigeons studied for disease recently were found infected with ornithosis. In a statement to the press, Dr. Rufus S. Reeves, director of public health, stated that the pigeons would be killed in the truck borne gas chambers of the Pennsylvania Society for Prevention of Cruelty to Animals.

Proposed Diabetic Survey.—A cooperative project will be conducted in Philadelphia to x-ray the chests of persons in the city having diabetes. The x-ray unit will be located first, beginning in late November, at the University of Pennsylvania Hospital, where there are 500 diabetic patients attending the clinic. It will then move to the Philadelphia General Hospital, where there are 1,000 diabetic patients attending the clinic. The cost of the survey will be borne by the Philadelphia Tuberculosis and Health Association. The appointment of necessary committees will be under the guidance of the Philadelphia County medical committees on diabetes and tuberculosis together with the x-ray survey committee of the Philadelphia Tuberculosis and Health Association. At the meeting September 24 at the Philadelphia County Medical Society, physicians interested in diabetes and tuberculosis discussed the various aspects of the survey, bringing out that it would be invaluable in shedding light on certain concepts long held regarding the response of diabetic patients to tuberculosis. It was further brought out that a mass survey might confirm or refute the concepts that hilar and basal sites are more frequently involved in tuberculous diabetic patients. The recording of simple data relevant to nutritional status might illumine the question as to whether or not nutritional status is one of the major factors in the increased susceptibility of diabetic patients to tuberculosis. It is proposed to divide the city into districts, installing a mobile x-ray unit in suitably located central hospitals for the x-ray examination of the diabetic patients in the vicinity and of nondiabetic outpatient controls.

TEXAS

Graduate Program on Psychiatry.—Dr. Stephen Weisz, Galveston, associate professor of neuropsychiatry, University of Texas Medical Branch, Galveston, is conducting a post-graduate program on psychiatry at the San Antonio State Hospital, San Antonio, under the auspices of the State Board of Control, the Hogg Foundation for mental hygiene and the medical school.

Beryl Burns Named Medical Director of Sealy Hospital.—Dr. Beryl I. Burns, who recently resigned as dean of the Louisiana State University School of Medicine, New Orleans, has been appointed medical director of the John Sealy Hospital and affiliated hospitals of the University of Texas Medical Branch, Galveston, effective in December. He will

have charge of professional activities and will be assisted by Mr. William O. Bohman, superintendent of the hospital, in respect to administrative details. He will also act as consultant in the erection of a new general hospital building as provided by grants from the Sealy and Smith Foundation.

UTAH

New Acting Dean.—Dr. Hyrum L. Marshall, Salt Lake City, professor and head of the department of public health and preventive medicine, has been named acting dean of the University of Utah School of Medicine, Salt Lake City. The administrative committee which formerly acted in the deanship capacity has, at its request, been dissolved (THE JOURNAL, March 17, p. 665). On recommendation of the executive committee of the medical school and with the approval of the board of regents of the University of Utah, a separate department of anesthesiology has been established in the school of medicine. Dr. Scott M. Smith, St. Louis, has been named assistant clinical professor of anesthesiology and acting head of the department.

University News.—The Givaudan-Delawanna Corporation has granted to Dr. Philip B. Price, professor of surgery, University of Utah School of Medicine, Salt Lake City, \$5,250 for the investigation of skin disinfection. The senior class has initiated a successful campaign to secure funds to add to the journal subscription of the medical school library. The members have assessed themselves \$20 each for this purpose and from this source and others interested in the medical school have now collected more than \$3,500. Dr. Randolph T. Shields, formerly surgery resident at the University of Pennsylvania School of Medicine, Philadelphia, and more recently major in the U. S. Army Medical Corps in the China-Burma-India theater, has been appointed instructor in surgery. The medical students on active duty with the armed forces, assigned to this institution for the study of medicine, have voluntarily initiated a payroll contribution plan whereby each student in the military service donates \$2 a month toward a student loan fund to be used to help finance medical education of needy civilian students. At the present time this fund totals over \$3,500.

WEST VIRGINIA

Charles Lively Named Permanent Secretary of State Association.—The council of the West Virginia State Medical Association October 14 elected Charles Lively, Charleston, as permanent executive secretary of the state medical association to succeed Major Joe W. Savage, who has accepted a position with the National Foundation for Infantile Paralysis, New York (THE JOURNAL, October 16, p. 472). Mr. Lively has been acting secretary of the state medical association since May 1942. The council also voted for a three day annual meeting at Huntington, May 13-15, 1946.

Review of Cancer Referrals.—In the fourteen months during which the state division of cancer control has been functioning, 703 referrals have been reviewed, a number far greater than was anticipated at the time the program was inaugurated. Of the total number of cases referred, 88.1 per cent have proved to be malignant. The amount expended for treatment exceeds \$46,000. Because of the unexpectedly high number of referrals of needy cancer patients, the cancer division has restated and clarified its policies and procedures concerning the extent of care that can be provided. As a result of suggestions and recommendations made by the cancer committee of the West Virginia State Medical Association, the following policies have been adopted:

Financial assistance can be extended only to those needy cancer patients who present a good prognosis. The division is not to authorize prolonged hospitalization to the incurable case, thereby jeopardizing the treatment of those patients who have a good possibility of cure. The division cannot assume any financial obligation for treatment or hospitalization of a case until the application has been reviewed and the necessary authorizations issued. Services and treatment can be given only at approved treatment centers and tumor clinics.

Bruce H. Pollock Named Deputy State Health Commissioner.—Dr. Bruce H. Pollock, formerly of Huntington, has been appointed deputy state health commissioner, succeeding Dr. Albert L. Chapman, Charleston, who has been serving as acting deputy on loan from the U. S. Public Health Service since 1944. Dr. Pollock was serving as director of the bureau of county health work in the state health department when he entered the Navy in 1941 with the rank of lieutenant. He was later promoted to the rank of lieutenant commander. He was first assigned to the Norfolk Navy Yard and then served as medical and sanitary officer with a Marine air group in the South Pacific. After his return to this country he served as flight surgeon at the office of Naval Officer

Procurement, Philadelphia, and at the Naval Air Technical Training Center at Memphis, Tenn. In 1936 he was connected with the West Virginia Training Center at Beckley and was responsible for the organization of Clay, Braxton, Webster and Nicholas counties into the first district health unit in the state.

GENERAL

Braille Society Makes First Public Appeal.—The Braille Institute of America recently launched the first special appeal for funds ever made to the public in its twenty-five years' existence. An expansion program is necessary to meet the needs of returning blind service men.

Poliomyelitis Commission Goes to Brussels.—A medical commission left New York October 24 for Brussels under the auspices of the National Foundation of Infantile Paralysis to help in the epidemic of poliomyelitis in Brussels, Belgium. Members of the commission include Dr. Rustin McIntosh, director of pediatrics at Babies Hospital, New York; Dr. Charles E. Irwin, chief surgeon of the Georgia Warm Springs Foundation, and Miss Alice Lou Plastringe, chief physical therapist at Warm Springs.

Resolution Seeks Assurance of Freedom in Animal Experimentation.—The recently organized Southwestern Section of the Society for Experimental Biology and Medicine has adopted a resolution announcing its plan to request state and national legislative bodies, through their appropriate committees, to assure the freedom of responsible scientific research in biology and medicine involving animal experiments, provided always that the animals in question are properly cared for and not required to suffer pain. The resolution, which was carried unanimously by members of the Southwestern Section, emphasized that experimentation with animals under satisfactorily controlled conditions is necessary for the advancement of knowledge regarding living things and that such experimentation is continually subject to the threat of legislative interference. Chauncey D. Leake, Ph.D., Dallas, is chairman of the Southwestern Section and Dr. Donald H. Slaughter, Dallas, secretary (THE JOURNAL, Oct. 14, 1944, p. 446).

Industrial Hygiene Meeting.—The tenth annual meeting of the Industrial Hygiene Foundation will be held at the Mellon Institute, Pittsburgh, November 14-15. John F. McMahon, managing director, will open the program with a talk on "The Foundation in War and Peace." Among other speakers are:

Major Gen. Lewis B. Hershey, Washington, D. C., Industry Needs the Veteran.

Dr. Clarence O. Sappington, Chicago, A Foundation Survey of Industrial Health Departments.

Dr. Leroy U. Gardner, Saranac Lake, N. Y., Dr. Arthur G. Crane, New York, Dr. Lloyd E. Hamlin, Chicago Heights, Ill., and Dr. Oscar A. Sander, Milwaukee, Accurate Diagnosis of Silicosis—Possible Sources of Error.

Francis R. Holden, Ph.D., Wilkensburg, Pa., and E. C. Hyatt, Pittsburgh, Accurate Measurement of Silicosis Hazards—Newer Methods. W. C. L. Hemench, M.S., Pittsburgh, Findings from Foundation Plant Surveys.

Putting the Disabled Veteran Back to Work, a continuation of the panel discussions at the 1944 and 1945 meeting of the foundation, will be discussed by:

Dr. Harold A. Vonachen, Peoria, Ill., Utilizing the Physically and Mentally Handicapped Worker.

Michael Supa, Utilizing the Blind Worker.

Major Gen. Paul R. Hawley, Activities of the Veterans Administration.

Col. John N. Andrews, Washington, D. C., and I. Dent Jenkins, Lockport, N. Y., Comments on Case History Successes and Failures.

Mead Johnson and Company B Complex Award.—

Nominations are solicited for the 1946 award of \$1,000 established by Mead Johnson and Company to promote researches dealing with the B complex vitamins. The recipient of this award will be chosen by a committee of judges of the American Institute of Nutrition and the formal presentation will be made at the annual meeting of the institute in the spring of 1946. The award will be given to the laboratory (nonclinical) or clinical research worker in the United States or Canada who, in the opinion of the judges, has published during the previous calendar year January 1 to December 31 the most meritorious scientific report dealing with the field of the B complex vitamins. While the award will be given primarily for publication of specific papers, the judges are given considerable latitude in the exercise of their function. If in their judgment circumstances and justice so dictate, it may be recommended that the prize be divided between two or more persons. It may also be recommended that the award be made to a worker for valuable contributions over an extended period but not necessarily representative of a given year. Membership in the American Institute of Nutrition is not a requisite of eligibility for the award. To be considered by the com-

mittee of judges, nominations for this award for work published in 1945 must be in the hands of the secretary by January 10. The nominations should be accompanied by such data relative to the nominee and his research as will facilitate the task of the committee of judges in its consideration of the nomination. Herbert E. Carter, Ph.D., Noyes Laboratory of Chemistry, University of Illinois, Urbana, Ill., is secretary of the American Institute of Nutrition.

Seminar for Study of Dental Medicine.—The second annual Seminar for the Study and Practice of Dental Medicine was held in Palm Springs, Calif., October 7-12. Participants in the seminar were members of the dental profession, medical profession and research workers in the biologic sciences. The primary aim of the meeting was to study the prevention and eradication of diseases of the mouth and related areas. Among the subjects scheduled for presentation and discussion were recent advances in nutrition, endocrinology, physiology of body fluids, psychosomatic medicine and dentistry, and pathology of teeth, osseous structures and blood. Attendance at the conference was limited in number because of the seminar character of the meeting. In accord with the need for "refresher courses" for professional men returning from service with the armed forces, special consideration was given to the applications of men reentering civilian practice after military service. The seminars were approved and sponsored by the Divisions of Educational Courses of the Southern California State Dental Association, the California State Dental Association, the Oregon State Dental Association and the British Columbia Dental Association.

Tropical Medicine Meeting.—The American Society of Tropical Medicine will hold its annual meeting in Cincinnati November 13-15 under the presidency of Dr. Rolla E. Dyer, Washington, D. C. Among the speakers will be:

Manuel Martinez Baez, Salubridad y Asistencia, Mexico, and Dr. E. Harold Hinman, Mexico, D. F., Opportunities for Training and Research in Tropical Medicine and Public Health in Mexico.

Victor P. Bond, Dr. Warren L. Bostick, San Francisco, Eder Lindsay Hansen and Dr. Hamilton H. Anderson, San Francisco, Pathologic Studies in Monkey Amebiasis.

Lieut. Col. James H. Dwinelle, M. C., Lieut. Col. Charles R. Rein, M. C., Lieut. Col. Thomas H. Sternberg, M. C., Major Albert J. Sheldon, M. C., Preliminary Report on the Evaluation of Penicillin in the Treatment of Yaws.

Major Theodore E. Woodward, M. C., Lieut. Col. Cornelius B. Philip, M. C., and Lieut. Col. Ralph R. Sullivan, M. C., Tsutsugamushi Disease (Scrub or Mite-Borne Typhus) in the Philippine Islands During American Reoccupation in 1944-1945.

Drs. George T. Harrell, John Avera and Ellard M. Yow, Winston-Salem, N. C., An Attempt by Feeding to Induce in Animals Reactivity to Trichinella Spiralis in the Absence of Infection.

Papers to be presented will cover a wide range of subjects on tropical medicine, some discussing cutaneous diphtheria and chemotherapy of human filariasis. The tenth Charles Franklin Craig Lecture on Tropical Medicine will be delivered by Col. Paul F. Russell, M. C., Washington, D. C., on "Lessons in Malariology from World War II." A feature of the meeting will be the presentation of the Bailey K. Ashford Award.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the week ended October 27 have been received from the division of public health methods, U. S. Public Health Service, as follows:

	Week Ended Oct. 27 1945	Week Ended Oct. 28 1944		Week Ended Oct. 27 1945	Week Ended Oct. 28 1944
New England			South Carolina...	2	4
Maine.....	2	0	Georgia.....	2	1
New Hampshire...	1	0	Florida.....	6	4
Vermont.....	2	0	East South Central		
Massachusetts...	21	21	Kentucky.....	4	14
Rhode Island.....	0	0	Tennessee.....	25	4
Connecticut.....	8	8	Alabama.....	3	4
Middle Atlantic			Mississippi.....	4	2
New York.....	48	182	West South Central		
New Jersey.....	26	30	Arkansas.....	0	0
Pennsylvania.....	22	36	Louisiana.....	9	4
East North Central			Oklahoma.....	0	1
Ohio.....	29	25	Texas.....	17	7
Indiana.....	5	8	Mountain		
Illinois.....	51	27	Montana.....	5	0
Michigan.....	5	19	Idaho.....	2	0
Wisconsin.....	45	5	Wyoming.....	1	0
West North Central			Colorado.....	7	1
Minnesota.....	13	24	New Mexico.....	3	0
Iowa.....	25	18	Arizona.....	0	0
Missouri.....	14	12	Utah.....	6	0
North Dakota.....	0	0	Nevada.....	0	0
South Dakota.....	0	0	Pacific		
Nebraska.....	2	4	Washington.....	6	9
Kansas.....	7	4	Oregon.....	5	3
South Atlantic			California.....	36	15
Delaware.....	3	8	Total.....	489	581
Maryland.....	0	17	First 43 weeks:		
Dist. of Columbia	3	6	1945 and 1944...	11,951	17,437
Virginia.....	9	25	Median, 1940-1944	8,383	
West Virginia.....	1	8			
North Carolina...	4	21			

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 6, 1945.

The Threatened Decline of the Population of Britain

In March 1944 a royal commission was appointed to investigate the course, causes and consequences of British population trends and to make recommendations on population policy. During fortnightly meetings over a period of eighteen months the commission has taken practically all the general evidence needed, but some further investigation on family size remains to be done with a sample census of 10 per cent of the 14 million married women in Britain. At the outbreak of war in 1939 it appeared that the British population would soon begin to decline. The chief factor was the fall in the average size of the family, which began in the decade of 1870. Until then married women had on an average more than 5 children. By 1930 the number was down to about 2, which made no allowance for children who died young or did not marry. The full effect of the fall in average size of family on population was not manifest until the early years of the present century, when the annual number of births began to decline. In the decade 1900-1909 the annual number of births was 1,064,000; by 1930-1939 it had sunk to 701,000, producing a profound change in the age distribution of population. In 1919 there were approximately 16 million persons under the age of 20 and in 1939 only 14 million. The war introduced a complication. The number of births in 1939 was 706,000; it dropped to 693,000 in 1940 and to 669,000 in 1941. Then began a striking rise to 745,000 in 1942, 778,000 in 1943 and 841,000 in 1944. This rise can be explained by the disappearance of unemployment and the family allowances paid to men in the fighting forces. The result was more and earlier marriages. But such a rise could not continue, if only because there were not enough girls of marriageable age. By 1943 the number of marriages was below prewar level.

In investigating the causes of the decline of the birth rate the commission found no evidence that it was due to any biologic failure or to any increase of the pathologic causes of sterility. But there was ample evidence that the immediate cause was the widespread practice of birth control. What determined the size of a family was, increasingly, the ideals and sentiments of men and women, their sense of responsibility to themselves and the community and their hopes and fears for the future. For a long time the economic and social pressures favored the small family. The commission is now examining evidence on ways and means to reduce these pressures and to encourage parenthood. Its report will be the one authoritative pronouncement on the serious question of the population of Britain.

The Wellcome Historical Medical Museum's Studies in the History of Medicine: The Development of Inhalation Anesthesia

The Wellcome Historical Museum was founded and endowed by the late Sir Henry Wellcome of the firm of Burroughs Wellcome and Co., who bequeathed his fortune for advancement of medical science. The museum has arranged to publish the first of its postwar series of Research Studies in the History of Medicine. This will be a work on the development of inhalation anesthesia, by Dr. Barbara M. Duncum of the Nuffield Department of Anesthetics, University of Oxford, and formerly on the staff of the Wellcome Historical Medical Museum. The work deals exhaustively with the history of inhalation anesthesia in England, in the United States and on the European continent from the scientific and clinical points of view. It shows as well the influence of the general current of events on this branch of surgery. Important features of the work are investigation of the

various changes of opinion in regard to the physiologic action of anesthetics, the evolution and practical application of inhalers and other apparatus and the introduction of anesthetic drugs during the period under review. The work, which is illustrated by over 160 photographs and drawings, should prove of special interest to the student of medical history, since it shows how modern anesthetic methods have grown from nineteenth century beginnings. It also should be of great practical value to anesthesiologists and research workers in anesthetics. The book will make approximately 600 pages.

Demobilization of Doctors

Dissatisfaction continues to be expressed at the slowness of the demobilization of doctors. The air force has announced that it proposes to continue the same ratio as during the war, namely 2.3 medical officers per thousand other ranks. This contrasts with 0.7 civilian doctor per thousand of population, at which the *Lancet* expresses astonishment. The medical demands of the navy also are criticized. It is argued that something more could be done in calling up more civilian doctors to replace those in the fighting services. This of course would not relieve the shortage, but it might remove the bitterness growing among service doctors who feel that they are being unfairly treated. As stated in a previous letter, civilian medical appointments which become vacant are being kept open so that doctors in the services can apply for them on release. The *British Medical Journal* has decided that advertisements of permanent medical appointments which do not invite applications from service doctors and allow at least four months for the receipt of applications shall be refused publication.

PARIS

(From Our Regular Correspondent)

Oct. 4, 1945.

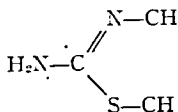
Physicians and the Plan of Social Security

The plan of social security described in a preceding letter to *THE JOURNAL* has given rise to discussion among French physicians, who are dissatisfied with the present bureaucratic organization of the *Caisses d'assurances sociales* (social insurance funds). The critics of the new plan propose mutualization, the division of funds and the free choice of affiliation; this in their opinion would be a better solution than the unification of social insurance. They oppose the proposed regulation that the insured be represented by syndicates. They believe that close collaboration of the insured in the management of the funds would be more effective if the latter elected directors directly. They regret that such a small representation (two delegates) has been given to physicians. The critics deplore the fact that the medical profession has not been given a greater responsibility in the working out of the text of the law. Physicians who are in favor of this law remark not only that it offers social and medical advantages, for instance the possibility of a larger system of preventive medicine, but that it is favorable to the medical profession. The unification of the funds on the departmental basis, the amalgamation of accident insurance in the social insurance fund, is bound to facilitate the administrative work of physicians. At the present time physicians are annoyed by the tedious clerical work of signatures and accounts, from which they will be more or less freed and consequently enabled to devote themselves to treating the sick. Extension of the social insurance system to all salaried and other workers will certainly increase the frequency of consultations. They appreciate the disappearance of private funds, which are commercial concerns and whose existence is contrary to the principle of social security. The participation of doctors in the management of the Social Insurance Institution will also enable them to protect the medical point of view.

In any case, all doctors insist on the enforcement of the three principles of (1) freedom for patients to choose their own doctor, (2) freedom for doctors to adopt any therapy and (3) professional secrecy.

Treatment of Hyperthyroidism by Aminothiazole

Thiourea and its related substance thiouracil are at present considered to be the most active agents in the treatment of hyperthyroidism. Experiments have been made in France with aminothiazole, otherwise called Abadol with the chemical structure:



The efficacy of this agent was discovered by chance. On workers handling aminothiazole, a substance which was used to prepare sulfathiazole, Dr. Jeantet of Lyons noticed an abnormal development of goiters, but without ill effects and with signs of hypothyroidism and lowering of the basal metabolism. It was sufficient to transfer the worker from one department to another to verify that the thyroid body resumed its normal size. On the contrary, the condition of hyperthyroid subjects working in the same factory was improved.

Marcel Perrault, Bovet, Prognat, Coumel and others explained their experimental and clinical studies on this substance at the meeting of the Société médicale des hôpitaux de Paris. Functional and subjective signs improve rapidly. Tremor is quickly suppressed. Tachycardia disappears and the pulse becomes normal. The weight increases by several kilograms. The basal metabolism is lowered to normal. The amount of cholesterol increases by 40 per cent, but the size of the goiter and exophthalmos does not appear to be influenced by this treatment. Aminothiazole has been administered to hyperthyroid patients in tablets of 0.1 Gm. at a rate of four a day during three to four weeks. Improvement persists in some patients after suspension of the treatment: in others, relapses take place after some weeks. Aminothiazole has not to the present time produced any toxic accidents, as mentioned by various authors, in England and in the United States in the treatment of hyperthyroidism by thiourea and thiouracil.

Second Interallied Surgical Conference on the Study of War Wounds

The second Interallied Surgical Conference took place at the military hospital Val de Grace with General Inspector Dr. Rouvillois presiding, assisted by General Inspectors Jane and Maissonnet. A considerable number of American, British, French and Belgian surgeons were present. Questions pertaining to the treatment of shock and of thoracic, abdominal and thoracic abdominal wounds were discussed, as well as cranial wounds. It was stated that local and general use of sulfonamides and penicillin constituted considerable progress for thoracic war surgery, especially penicillin injected intrapleurally. The same results were obtained in the treatment of cranial wounds, above all in the prevention of infectious complications and in the treatment of existing infections.

In the treatment of abdominal wounds, sulfonamides and penicillin did not give the anticipated results.

The conference emphasized the importance of care and of the postoperative treatment of abdominal thoracic and above all of cranial wounds. The latter ought, on principle, to be treated by neurosurgeons.

Purulent chronic pleurisy with fistulas is much less frequent than after the war of 1914-1918; in the treatment of abdominal wounds the surgical results are twice as favorable as in the last war. The third conference will take place early in November.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Sept. 26, 1945.

Work Against Leprosy

Leprosy is a health problem of prime importance in Brazil, since there are about 50,000 cases of this disease. This explains the recent creation in the Ministry of Health of the National Institute of Leprosy with a research program and coordination of all the government and private activities in this field. The experimental studies will aim at the problems of pathology, diagnosis and treatment of the disease, as well as at its epidemiology and prevention. Before the creation of this institute the Ministry of Health, through the routine activity of the Division of Leprosy of the National Department of Health, was stimulating all sorts of investigation in this field. The Division of Leprosy has awarded cash prizes for the publication of standard monographs on such subjects as the history of leprosy in Brazil, the geographic distribution of the disease and the clinical and laboratory diagnosis of leprosy, by Drs. Armando Berti, Lauro de Souza Lima and Nelson Souza Campos respectively. An important meeting of South American leprologists was held recently at Tres Corações, in the state of Minas Gerais, under the chairmanship of Dr. Christiano Machado, state health commissioner. The meeting was sponsored by the Societies of Leprology of the states of Minas Gerais and São Paulo and by the health authorities of the two states as well as by the Brazilian federal government. The meeting was held at the Santa Fé Leprosarium in the vicinity of the city of Tres Corações, one of the largest institutions of its kind in the country. The subject for discussion was the classification of leprosy. Besides Dr. Machado, some fifty Brazilian specialists were present, among them Dr. Ernani Agricola, head of the Division of Leprosy of the National Department of Health, Dr. Nelson Souza Campos, head of the Service of Leprosy of the state of São Paulo, and Dr. Orestes Diniz, head of a similar organization of the state of Minas Gerais.

American Visceral Leishmaniasis in Vivo

A second case of autochthonous American visceral leishmaniasis in vivo has been recently reported by Dr. Armando Tavares, a pediatrician of Recife, state of Pernambuco, Brazil. The patient, a child, was treated and cured. Dr. Penna, a Brazilian physician working for the International Health Division of the Rockefeller Foundation, reported in 1934 the first instance of autochthonous kala-azar, or visceral leishmaniasis, in the Western Hemisphere in a sample of liver taken for a routine postmortem viscerotomy. Within the period of a few months 35 additional samples of liver were ascertained as positive, making up a total of 36 cases. Except for 2 cases from the Amazon Valley, all the rest were from the northeastern section of Brazil, where anti-yellow fever work is furthest developed and viscerotomy examinations are most abundant. The studies of Penna were confirmed during 1936 by Evandro Chagas and his co-workers of the Oswaldo Cruz Institute of Rio de Janeiro, who described a new species, *Leishmania chagasi*, and Dr. Alvaro Figueiredo of Recife, who reported a case diagnosed after death, the diagnosis having been based on the clinical picture and the formol-gel test. During the period 1936-1945 several instances of positive results were reported in liver samples from almost all the tropical sections of South America.

Early in 1941 Dr. Armando Tavares reported, to the Medical Society of the State of Pernambuco, the first case of American visceral leishmaniasis in vivo. The patient was a child aged 2 years from the country section of the state of Pernambuco presenting irregular fever dating from several months, diarrhea, profound anemia, a large abdomen in contrast to generalized emaciation, palpebral edema, enormous splenomegaly and slight hepatomegaly. The puncture of the spleen permitted the posi-

tive diagnosis of kala-azar. In spite of an intensive treatment with Ncostibosan the child died, and the samples of liver taken from the body were considered typically positive by Dr. Lobato Paraense of the Division of Pathology of the Oswaldo Cruz Institute. The new case concerns a child aged 4 years, also from a country district of Pernambuco, who had fever and splenomegaly for two months. Treated unsuccessfully for malaria, the patient was brought to Recife. A puncture of the spleen was made which gave a typically positive result. This patient, treated specifically with injection of antimony preparations (Antimonialine and Antimonil) two months after the onset of the illness, recovered rapidly. Dr. Tavares points out that this second case presented an interesting symptom that did not occur in the first one: severe pain in both hypochondria, which progressively disappeared as the treatment advanced.

A Modification of the Ziehl-Neelsen Staining Method

Dr. J. Pitanga Santos recently published a paper in which he reports a modification of the Ziehl-Neelsen method of staining sputum smears for the search of tubercle bacilli. The new method differs from the 'Ziehl-Neelsen routine procedure only in the discoloration stage, which is performed by the use of a 25 per cent solution of sulfuric acid in distilled water instead of the common 2 per cent concentrated hydrochloric acid in ethyl alcohol, acting for at least ten minutes. Dr. Santos emphasizes that the tubercle bacillus stands the discoloration reaction even when this stage of the procedure is continued for about twenty minutes. This is the main point in the modification, since all other acid-alcohol fast germs are discolored when the sulfuric acid solution acts for ten minutes. In most cases the only acid-alcohol fast germ found in the human sputum is the tubercle bacillus (human and bovine types). Other acid fast bacilli may be found in sputum: *Mycobacterium leprae*, *M. lacticola* and some filaments of *Actinomyces* as well. Dr. Pitanga Santos states that, using his modification during the present year in the laboratory of a tuberculosis clinic of the Rio de Janeiro City Health Department, he has examined 1,272 samples of sputum of suspected cases, with 337 positive results, or 26.49 per cent. All these cases were considered positive for tuberculosis on the basis of the x-ray examination and the clinical findings.

Meeting of Brazilian Ophthalmologists

The twenty-third annual meeting of the Brazilian Society of Ophthalmology was held at Rio de Janeiro, September 1-6. The principal topics discussed at the meeting were the present conditions of ophthalmology in the United States (Dr. Geraldo Queiroga), the treatment of ocular syphilis (Dr. Mendonça Barros), the operation of pterygium (Dr. Laborne Tavares), ocular plastic surgery (Dr. Loch Junior), sutures in the operation of cataract (Dr. Caldas Brito), heterophoria (Dr. Nicolino Machado), binocular vision of the strabismic (Drs. Paula Filho and Barbosa da Luz) and fundus oculi of the young child (Drs. L. Assumpção Osorio and Meton de Alencar). Several inspection trips were made, and a few operations were performed during the days of the meeting.

Honoring Col. Marques Porto

Several ceremonies have taken place to honor Col. Marques Porto, head of the medical service of the Brazilian expeditionary force which operated in Italy during the last eleven months of the war. In a luncheon at the Brazilian Automobile Club, after several speeches commending the work of this leading army physician, Col. Marques Porto presented a condensed report of the achievements of the medical service under his direction. During these eleven months 10,536 wounded, sick and injured officers and soldiers were admitted to the Brazilian sections annexed to American military hospitals in Italy. Of this total 9,137, or 86.7 per cent, have recovered.

Only 49 died as a result of wounds or diseases, the low fatality rate of 0.49 per cent. These good results, Colonel Porto pointed out, derived from the learning, by Brazilian physicians, of the new American war medical methods and the cordial cooperation of the U. S. Army Medical Corps. A special meeting was held by the National Academy of Medicine of Rio de Janeiro at which Drs. Leonel Gonzaga, Estelita Lins, C. Implido de Santana and Oliveira Botelho spoke in praise of the distinguished services of Col. Marques Porto.

Personal

Dr. Octavio Rodrigues, Lima, has been appointed professor of obstetrics at the University of Rio de Janeiro, succeeding Dr. Fernando Magalhães. Dr. Rodrigues, Lima, an able practitioner of the specialty at Rio de Janeiro, is son of the late Dr. A. Rodrigues Lima, who was also a leading obstetrician and for some time a member of the House of Representatives of Brazil during the twenties.

Dr. J. P. Fontenelle, professor of Public Health Administration of the Course of Public Health of the Instituto Oswaldo Cruz, has resigned the post of director of the Division of Health Information of the Rio de Janeiro City Department of Health. Dr. Paulo P. da Rocha has been appointed in his place.

Lieut. Comdr. Moacyr Itapicurú Coelho of the Brazilian Navy Medical Corps died at the age of 37 when the cruiser *Bahia* exploded in the South Atlantic last month.

Dr. Carlos V. Costa Lima of the Brazilian Navy Medical Corps has been promoted to the grade of rear admiral and appointed surgeon general of the same corps.

After the regular competitive examinations, Drs. Roberto Pimenta de Mello, Ernani Martins da Silva, Eitel Moreira Duarte, Gobart A. Costa, F. Rocha Lagoa, Haity Moussatché and Ulysses Vianna Dias have been appointed to the Instituto Oswaldo Cruz of this city. The first two of these new members of the institute will work in the division of hematology, the third in the division of pathology, the fourth and fifth in the division of bacteriology and the last two in the division of physiology.

Dr. Einor H. Christopherson, formerly head of the American Technical Mission which worked jointly with the Special Service of Public Health (the SESP), the main project of which is the sanitation of the Amazon Valley, has been awarded by the Brazilian government the medal of the *Cruzeiro do Sul* (Southern Cross) in recognition of his meritorious services to the health of Brazil. The ceremony of the bestowal of the decoration took place at the Itamaraty Palace, where the Brazilian state department is housed.

Marriages

WILLIAM HUTCHINSON SPRUNT III, Winston-Salem, N. C., to Miss Priscilla Wood Perry of Washington, D. C., September 28.

CHARLES RUPERT McADAMS JR., Belmont, N. C., to Miss Bette Jane Silcox of Philadelphia in New Orleans, September 14.

JOSEPH HARTSHORN PERRY III, Wynnewood, Pa., to Miss Marian Elizabeth Goodale of Mifflintown, August 4.

THOMAS LEWIS MARTIN, Greenville, S. C., to Miss Eyleen Miriam Runge at Belton, August 31.

DURWOOD J. THIBAU JR. to Miss Marie Solorge Derelle, both of New Orleans, recently.

HERMAN F. FLANIGIN JR., Oklahoma City, to Miss Thelma Thiessen of Hydro, July 29.

ABRAHAM KOSITSKY, Drake, N. D., to Miss Susan Shore in Ottawa, Ont., August 5.

ROLAND L. KLEEBERGER to Miss Lois Marie Melichar, both of Omaha, June 30.

Deaths

Fauntleroy Flinn, Decatur, Ill.; Medical College of Virginia, Richmond, 1914; specialist certified by the American Board of Radiology, Inc.; member of the American Medical Association, Radiological Society of North America, Inc., and the American College of Radiology; past president of the Decatur Medical Society; past president and secretary of the Illinois Radiological Society; at one time with the U. S. Bureau of Mines; member of the advisory board of the state division of cancer control; supervised the x-ray and radiologic departments at St. Clara's and Deaconess hospitals in Lincoln. St. Anthony's Hospital in Effingham, Shelby County Memorial Hospital in Shelbyville and the Kirby Hospital in Monticello; on the staffs of the Wabash Employees' Hospital and St. Mary's Hospital, where he died July 26, aged 55, of chronic myocarditis.

Albert Henry Andrews, Chicago; State University of Iowa College of Medicine, Iowa City, 1889; member of the American Academy of Ophthalmology and Otolaryngology and the American Broncho-Esophagological Association; specialist certified by the American Board of Otolaryngology; from 1933 to 1944 instructor in otolaryngology at Northwestern University Medical School; formerly associate professor of otology, laryngology and rhinology at the Illinois Post-Graduate Medical School; on the staff of the Wesley Memorial Hospital; oculist and aurist, Chicago, Rock Island and Pacific Railway System; died October 1, aged 83.

Adam D. Schlotthauer ☉ Newport, Wash.; College of Medical Evangelists, Loma Linda-Los Angeles, 1918; served as health officer of Pend Oreille County; at one time superintendent of the Walla Walla Sanitarium in College Place; on the staff of St. Luke's Hospital in Spokane, where he had served as vice president of the staff; on the staff of the Newport Community Hospital; past president and charter member of the Kiwanis Club; died in the Deaconess Hospital, Spokane, July 16, aged 65, of intestinal obstruction, postoperative to gastric resection for duodenal ulcer.

James Henry Keeling, Knoxville, Tenn.; New York Medical College and Flower Hospital, New York, 1914; member of the American Medical Association; president of the state board of medical examiners; awarded the Purple Heart and decorated by the British for service during World War I; served as an examiner of draftees for World War II, receiving a citation from President Roosevelt for his extraordinary work in that capacity; on the staff of Fort Sanders Hospital, where he died September 1, aged 54, of rheumatoid arthritis.

George Randolph Harris ☉ Pittsburgh; University of Pittsburgh School of Medicine, 1914; served as secretary and executive secretary of the Allegheny County Medical Society; committee member and delegate to the Medical Society of the State of Pennsylvania, in which he held the office of speaker of the House of Delegates at the time of his death; served during World War I; for many years examiner for the Civil Aeronautics Administration; formerly on the staff of the Passavant Hospital; died October 2, aged 54, of massive cerebral hemorrhage.

Enos B. Allen, Trenton, N. J.; Cleveland Homeopathic Medical College, 1899; on the staff of the William McKinley Memorial Hospital; died July 31, aged 71, of coronary occlusion.

James Ellison Anderson, Fearn Springs, Miss.; University of Louisville (Ky.) Medical Department, 1910; died July 25, aged 59, of pulmonary tuberculosis.

Elmer Eugene Babcock, Redlands, Calif.; College of Physicians and Surgeons of Chicago, 1884; died July 15, aged 86, of heart disease.

Joseph Henry Baker, Aliquippa, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1893; died July 28, aged 80, of senility.

William Franklin Baker, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1898; served on the faculty of his alma mater; past president of the Philadelphia County Homeopathic Medical Society; formerly superintendent of St. Luke's Hospital; died in the Episcopal Hospital June 27, aged 69.

Joseph DeVere Barber, Westerly, R. I.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1893; member of the American Medical Association; on the staff of the Westerly Hospital; died July 27, aged 74.

Joshua R. Bechtel, Lawrence, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1900; member of the American Medical Association; on the staff of the Lawrence Memorial Hospital; died July 26, aged 80, of arteriosclerosis.

James R. Bell, Fairfield, Neb.; Ensworth Central Medical College, St. Joseph, Mo., 1907; died in the Mary Lanning Memorial Hospital, Hastings, July 30, aged 72, of heart disease.

Elmer Elsworth Bowser, Tulsa, Okla.; Howard University College of Medicine, Washington, D. C., 1914; affiliated with the State Hospital for Negro Insane in Taft; died July 8, aged 58.

Howard Conley Brashear ☉ Mexico, Mo.; St. Louis University School of Medicine, 1917; fellow of the American College of Surgeons; served in the medical corps of the U. S. Army during World War I; staff surgeon at the State Hospital in Fulton; member of the consultant staff of Ellis Fischel Hospital in Columbia and staff member of the Audrain Hospital; died July 27, aged 54, of carcinoma of the lung.

Frank Nesdil Bresnihan ☉ Cambridge, Mass.; Tufts College Medical School, Boston, 1913; died in the Somerville (Mass.) Hospital July 29, aged 59, of congestive heart disease.

Embry Allen Buckley, Little Rock, Ark.; University of Tennessee Medical Department, Nashville, 1908; for many years affiliated with the Republic Mining and Manufacturing Company Hospital in Bauxite; died in the Baptist State Hospital July 14, aged 61, of coronary thrombosis.

Peter Alfonso Callahan, Philadelphia; Jefferson Medical College of Philadelphia, 1927; served as a captain in the medical corps, Army of the United States, from July 1942 to Aug. 23, 1943, when he was released from active duty; died in the Nazareth Hospital May 22, aged 47, of bronchopneumonia.

Lowell Holbrook Chamberlain ☉ Des Moines; Jefferson Medical College of Philadelphia, 1900; also a graduate in pharmacy; member of the Society of American Bacteriologists; died July 22, aged 68, of second degree burns resulting from an accidental explosion.

Louis Warren Chilton Sr., Goliad, Texas; Louisville (Ky.) Medical College, 1890; county health officer; died in Balmorhea July 4, aged 77, of coronary thrombosis.

Font Randall Boyd Coggin, Waverly, Ala.; University of Alabama School of Medicine, 1911; member of the American Medical Association; died in LaFayette July 9, aged 67, of pneumonia and heart disease.

Albert S. J. Collins ☉ Monticello, Ark.; Memphis (Tenn.) Hospital Medical College, 1894; honorary member of the Arkansas Medical Society; served as coroner for Monticello; died in Little Rock July 27, aged 74, of arteriosclerotic heart disease and hypertrophy of the prostate.

Arthur Rockwell Couch, Hartford, Conn.; New York Homeopathic Medical College and Hospital, 1905; member of the American Medical Association; past president of the city board of health; on the staff of the Hartford Hospital; died July 9, aged 66, of coronary thrombosis and cirrhosis of the liver.

Robert Roscoe Cutler, Washington, Mo.; St. Louis College of Physicians and Surgeons, 1915; member of the American Medical Association; president of the Franklin County Medical Society; served during World War I; on the staff of St. Francis Hospital; died July 5, aged 56, of coronary occlusion.

Ross Gilbert Downs, Newark, Ohio; Ohio Medical University, Columbus, 1897; member of the American Medical Association; died in St. Anthony's Hospital, Columbus, July 4, aged 76, of abdominal cancer.

Thomas Latane Driscoll, Columbia, Va.; University of the South Medical Department, Sewanee, Tenn., 1906; member of the American Medical Association; at one time on the faculty of the Medical College of Virginia, Richmond; served during World War I; a major in the medical corps, Army of the United States, during World War II; relieved from active duty April 17, 1943; attending physician at the Cumberland prisoner of war camp; died May 30, aged 61.

William LaFayette Freeman ☉ St. Cloud, Minn.; Rush Medical College, Chicago, 1903; on the staffs of the Veterans Administration Facility and St. Cloud Hospital; died July 18, aged 64, of coronary thrombosis.

Edgar S. B. Geesaman, Fort Calhoun, Neb.; John A. Creighton Medical College, Omaha, 1912; member of the American Medical Association; died July 16, aged 57, of coronary thrombosis.

Howard Alva Garner, Hanna, Ind.; Indiana University School of Medicine, Indianapolis, 1920; member of the American Medical Association; past president of the La Porte County Medical Society; county deputy coroner; died in the Porter Memorial Hospital, Valparaiso, July 18, aged 56, of cerebral hemorrhage.

Logan Gragg, Lexington, Ky.; Medical College of Ohio, Cincinnati, 1891; member of the American Medical Association; died July 26, aged 77, of heart disease.

Robert Bragg Hagood, Lowndesboro, Ala.; Medical Department of Tulane University of Louisiana, New Orleans, 1905; member of the American Medical Association; died July 31, aged 65, of bacterial endocarditis.

John William Handy, Flint, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1884; member of the American Medical Association; emeritus member of the Michigan State Medical Society; past president of the Genesee County Medical Society, which honored him in 1934 when he completed fifty years in the practice of medicine; died July 28, aged 92, of cerebral thrombosis and arteriosclerosis.

Julian E. Hanna, Noblesville, Ind.; Medical College of Indiana, Indianapolis, 1905; died July 29, aged 74, of carcinoma of the pancreas.

Arthur Gordon Hodgins @ Honolulu, Hawaii; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1896; fellow of the American College of Surgeons; past president of the Hawaii Territorial Medical Association; served as a member of the Territory of Hawaii Board of Health; surgeon, Queen's, Kauikolani Children's and St. Francis hospitals, and Kapiolani Maternity Home; died in July, aged 69.

Howard Edward LeCates, Delmar, Del.; University of Maryland School of Medicine, Baltimore, 1913; member of the American Medical Association; physician for the Pennsylvania Railroad; member of the library commission of Delmar; on the staff of the Peninsula General Hospital, Salisbury, Md.; died July 19, aged 57.

Christopher Fahrner Mack, Richmond Hill, N. Y.; New York University Medical College, 1898; died in Forest Hills, July 23, aged 79, of intestinal carcinoma.

James Edgar Maulding, Washington, D. C.; Howard University College of Medicine, Washington, 1897; died in the Washington Sanitarium, Takoma Park, Md., August 6, aged 77, of congestive cardiac failure and coronary arteriosclerosis.

Charles Knight McCarthy, Webster City, Iowa; Tufts College Medical School, Boston, 1930; member of the Ameri-



LIEUT. JOSHUA WARFIELD BAXLEY III
(MC), U.S.N.R., 1916-1944



CAPT. JAMES CANFIELD FISHER
M. C., A. U. S., 1913-1945



MAJOR BARNEY LIHN
M. C., A. U. S., 1909-1944

Joseph Harold Henry, Detroit; Detroit College of Medicine, 1906; died in Gaylord, Mich., July 18, aged 73, of angina pectoris.

Robert Y. Henry, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1891; died July 12, aged 76, of cerebral hemorrhage.

can Medical Association and the Massachusetts Medical Society; served as director of activities for the control and prevention of tuberculosis, Iowa State Department of Health; had been affiliated with the division of tuberculosis of the Massachusetts Department of Public Health; died July 10, aged 49, of coronary heart disease.

KILLED IN ACTION

Joshua Warfield Baxley III, Ellicott City, Md.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1941; interned at the University Hospital in Baltimore; began active duty as a first lieutenant (jg) in the medical corps of the U. S. Naval Reserve on July 15, 1942; attached to the U. S. S. *Bristol*; promoted to lieutenant; awarded the European-African-Middle Eastern Area campaign medal and Purple Heart; officially reported to be missing in action as of Oct. 13, 1943, having been aboard the *Bristol* when that vessel was torpedoed and sunk in the Mediterranean off the coast of Algeria; presumptive date of death Oct. 14, 1944, according to the Navy Department, aged 28.

James Canfield Fisher, Arlington, Vt.; Harvard Medical School, Boston, 1939; interned at the Newton

Hospital in Newton, Mass., and the Boston City Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, on June 20, 1942; later promoted to captain; killed in action in Luzon, P. I., January 31, aged 31.

Barney Lihn, Vineland, N. J.; Temple University School of Medicine, Philadelphia, 1934; member of the American Medical Association; interned at St. Peter's General Hospital in New Brunswick; began active duty as a first lieutenant in the medical corps, Army of the United States, on July 16, 1941; promoted to captain and major; headquarters flight surgeon, 313th Troop Carrier Group; killed in action in the European theater of operations June 7, 1944, aged 34.

Thomas Garrett Pretlow, Chester, Va.; University College of Medicine, Richmond, 1903; member of the American Medical Association; for many years county coroner; died July 8, aged 66, of coronary occlusion.

Allen Dorsey Rebo, Scott, Ark.; American Medical University, Kansas City, Mo, 1927; died July 15, aged 40, of hemorrhage from stomach and bowels and carcinoma.

Sidney Mitchell Roberts, Chicago; Loyola University School of Medicine, Chicago, 1917; served during World War I with the Civilian Conservation Corps, the induction board of the Selective Service and as a member of the adjudication board of the Veterans Administration Facility in Hines, Ill.; died in Sparta, Wis., July 16, aged 56, of coronary occlusion and diabetes mellitus.

Lily Theresa Roche, Rochester, N. Y.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; died in the Danbury (Conn.) Hospital June 8, aged 77.

Robert Arnold Schoonover * Greensboro, N. C.; Baltimore Medical College, 1905; past president of the Guilford County Medical Society; for twenty-one years consulting physician at the Greensboro College; died in St. Leo's Hospital July 24, aged 65, of carcinoma of the rectum.

Thomas Dow Summerford, Caraway, Ark.; University of Tennessee Medical Department, Nashville, 1916; died in the Baptist Memorial Hospital, Memphis, Tenn., June 16, aged 63.

Jay Dunham Thomas, Springfield, Ohio; Medical College of Ohio, Cincinnati, 1895; at one time Clark County coroner; formerly secretary and member of the staff of the Springfield City Hospital; served as superintendent of the Clark County Tuberculosis Sanatorium; formerly tuberculosis expert with the regional offices of the U. S. Veterans Bureau in Cincinnati; died June 23, aged 77, of primary anemia.

Ansel Lee Van Horn, Chandler, Ariz.; the Hahnemann Medical College and Hospital, Chicago, 1907; served as a member of the board of directors of the local chamber of commerce; died June 28, aged 67.

William Edward West, Garnerville, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1895; formerly on the staff of the Sydenham Hospital and with St. Bartholomews Clinic, both in New York; died June 24, aged 75.

George Louis Wurtzel, New York; College of Physicians and Surgeons, Baltimore, 1912; member of the American Medical Association; served during World War I; on the



LIEUT. (JG) KENNETH J. MURRAY
(MC), U.S.N.R., 1912-1945



LIEUT. (JG) WILLIAM E. STRUBE
(MC), U.S.N.R., 1914-1945



CAPT. MANNING LIONEL NELSON JR.
M. C., A. U. S., 1917-1945

William W. Scott, Elk Creek, Va.; Medical College of Virginia, Richmond, 1884; died July 15, aged 89, of cerebral hemorrhage.

staffs of the New York Post-Graduate Medical School and Hospital, the Reconstruction and Park East hospitals; died June 28, aged 57.

KILLED IN ACTION

Kenneth Joseph Murray, Brookline, Mass.; Jefferson Medical College of Philadelphia, 1941; interned at the Hartford Hospital, Hartford, Conn.; began active duty as a lieutenant (jg) in the medical corps, U. S. Naval Reserve, on July 12, 1943; assigned to Naval Receiving Station in Boston, Medical Field Service School at Camp Jeune, N. C., and Camp Pendleton in San Diego, Calif.; for a year before his death was on active duty in the Pacific; in February 1944 participated in the invasion of the Marshall Islands, in June that same year in the Saipan invasion and in the following month in the Tinian invasion; in October 1944 was made battalion surgeon; for his heroism on Saipan received the Bronze Star and the Presidential citation; killed in the Pacific in February, aged 32, during the invasion of Iwo Jima.

William Ernest Strube, Fort Worth, Texas; Baylor University College of Medicine, Dallas, 1941; interned at the Naval Hospital in Great Lakes, Ill.; entered the U. S. Navy as an acting assistant surgeon, lieutenant (jg) in

June 1941; began active duty in the same grade in the medical corps of the U. S. Naval Reserve on Nov. 18, 1942; for six months on recruiting duty with the Marines in San Antonio; later ordered to Butte, Mont., where he remained until he received orders to report to San Francisco for sea duty; served aboard the *Hazelwood* 1943; held the Navy-Marine Corps Medal, Purple Heart, Asiatic Pacific Area Campaign Medal and American Defense Service Medal; participated in twelve major engagements; died in the Asiatic area April 29, aged 31, of extreme multiple injuries.

Manning Lionel Nelson Jr., North, S. C.; Medical College of the State of South Carolina, Charleston, 1942; interned at the Columbia Hospital in Columbia, S. C.; began active duty as a first lieutenant in the medical corps, Army of the United States, on July 1, 1943; later promoted to captain; killed in action in the Pacific Ocean area March 28, aged 27.

Correspondence

DRUGS AND PALMAR DERMATOSES

To the Editor:—The report on Dermatoses of the Hands by Drs. C. Guy Lane et al. (*THE JOURNAL*, August 4) is of considerable interest, since a hypothesis has been proposed which may be of aid to physicians in the diagnosis of dermatoses. The authors have indicated that in at least 36 per cent of their cases the cause was not known. It would seem desirable to determine the possible influence of drugs as etiologic factors. In the abstract of discussion, Comdr. Marion B. Sulzberger (MC), U.S.N.R., spoke of other factors, including certain foods or drugs, which should be considered in the differential diagnosis of dermatoses.

May I suggest that palmar lesions may be caused by a few of the well known and commonly used drugs. The sulfonamides, especially sulfapyridine, the iodine and bromine containing compounds, antipyrine, arsenic and gold compounds and insulin have been reported responsible for palmar lesions. Since the majority of these agents are used in the therapy of chronic disease, their influence on such lesions might well be overlooked unless the history of each patient is taken carefully.

Diodoquin, a hydroxyquinoline containing 60 per cent or more of iodine, may cause extensive dermatitis covering the entire body (Norman David, personal communication). In this patient the diagnosis of fungous infection was made because of tropical residence five years previously.

The authors have stressed the importance of self medication and the mistake that patients not infrequently make in believing that their dermatitis is due to a fungous infection.

Should drugs be responsible for the dermatosis, it would seem unwise to administer sulfonamides as suggested by the authors, since patients with unusual sensitivity to one chemical type may have some sensitivity to others.

Finally, it should be emphasized that infectious agents other than those noted by the authors have been responsible for palmar lesions and should be considered in the differential diagnosis.

HAMILTON H. ANDERSON, M.D., San Francisco.

Professor of Pharmacology, University
of California Medical School.

FAVISM

To the Editor:—A boy aged 2 years of Italian parentage was admitted to the hospital because of dysphagia of about eighteen hours' duration, increasing pallor and mild jaundice of about twenty-four hours' duration, vomiting, malaise and generalized weakness. The child was well nourished. The skin and sclerae had a mild icterus. There was a distinct pallor to the skin. The spleen was not palpable. The temperature was 99.8 F. Otherwise the physical examination was negative. Laboratory studies revealed 25 per cent hemoglobin, 1,390,000 red blood cells and 45,650 white blood cells with 70 per cent polymorphonuclear leukocytes and 30 per cent lymphocytes. The urine showed 10 mg. of albumin. A tentative diagnosis of acute hemolytic anemia was made, the etiology to be determined. Erythrocyte fragility tests were normal. X-ray studies of the skull revealed no changes to be compatible with Cooley's anemia. Transfusions were given and the blood picture was restored to about normal. Improvement was gratifying on the second day of admission, and for the remaining three days of hospitalization he was symptom free.

The child had eaten several fava beans just prior to the onset of his attack. Favism is an acute hemolytic anemia caused by contact with the fava bean or the plant from which it comes. This condition is relatively common in the Mediterranean

countries. To the best of our knowledge it has been reported on only three occasions in this country. The fava bean, although not common in this country, is grown and eaten by persons of Mediterranean origin in many sectors of the United States. Favism should therefore be considered when acute hemolytic anemia occurs in persons of Mediterranean origin.

It appears likely that many more cases of favism would be discovered if this condition should be kept in mind.

HERBERT E. SPAULDING, M.D.

WALTER J. LEVINSKY, M.D.

Eric, Pa.

Attending pediatrician and attending pediatric
intern, respectively, Hamot Hospital.

HEAT FOR RELIEF OF ITCHING DUE TO SENSITIVITY

To the Editor:—I was much interested in the communication of Dr. Francis E. Park in the August 15th issue of *THE JOURNAL*.

Some years ago I developed an itching of the dorsum of both feet, which was intense and kept me awake nights. After unsuccessful treatment by two dermatologists, I consulted Dr. Marion Sulzberger, who immediately recognized that I was allergic to the leather in my shoes. He advised my changing to white shoes and this effected a cure. Since then I have found that it was only tan leather or tan leather lining of black shoes which caused itching. Black shoes with black, gray or white lining caused no trouble.

Before my cure I tried many antipruritic ointments, powders and liniments with little or no relief. But I learned that immersing my feet for ten to fifteen minutes in very hot water caused at first such an intensification of the itch that, in the words of Dr. Park, "it was almost a pleasure." After that the itching was relieved for the whole night and I was able to sleep.

MARKS S. SHAINÉ, M.D., New York.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in *THE JOURNAL*, Oct. 6, page 478.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II, Nov. 12-14. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY & SYPHILOLOGY: *Written*. Group B. April 22. *Oral*. Group A and B. June 6-8. Final date for filing application is March 1. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written*. Various centers. Feb. 18. Final date for filing application is December 1. Asst. Sec., Dr. W. A. Werrell, 1 W. Maine St., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral*. Chicago, May 27. Final date for filing application is Feb. 1. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago 12.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Jan. 18-22 and Los Angeles, Jan. 28-Feb. 1. Sec., Dr. S. Judd Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF OTOLARYNGOLOGY: Spring 1946. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF PEDIATRICS: *Oral*. Atlantic City, Dec. 7-8. Sec., Dr. C. A. Aldrich, 115½ First Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: *Oral*. New, Dec. 20-22. Chicago, May 24-25. Final date for filing application is February 1946. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., N.W., Washington 6, D. C.

AMERICAN BOARD OF SURGERY: *Written*. Part I. Spring 1946. Final date for filing application is Dec. 1. Sec., Dr. J. Stewart Rodman, 225 South 15th St., Philadelphia.

AMERICAN BOARD OF UROLOGY: *Written*. Various centers, Dec. 9. *Oral*. Chicago, February 1946. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago 70:1-60 (July) 1945

- Tuberculin Reaction in Children with Ghon Complex. Review of 112 Cases. M. A. Norval.—p. 1.
Infantile Dwarfism (Encephalomyelitis) in Siblings. J. Monfort, S. H. Polayes and R. Sorkin.—p. 4.
Contribution to Knowledge of Laurence Moon Biedl Syndrome. Three Cases of Monstrous Infantile Obesity. E. Jaso and A. Arbelo Curbelo.—p. 9.
Massive Infection with *Trichuris Trichiura* in Children: Report of 4 Cases, with Autopsy. L. Getz.—p. 19.
*Immunity Response of Mothers and Babies to Injections of Pertussis Vaccine During Pregnancy. Pearl Kendrick, Mary Thompson and Grace Eldering.—p. 25.
Preventive Care of Infants and Children: I. First Postnatal Family Interview. C. A. Tompkins.—p. 32.

Response to Pertussis Vaccine During Pregnancy.—Kendrick and her associates report opsonocytaphagic reactions to *Hemophilus pertussis* in 99 pregnant women, of whom 57 were immunized with pertussis vaccine and 42 were nonimmunized. A pronounced rise in opsonins was observed after injections of vaccine. The ratio of the average opsonic reaction of nonimmunized to that of immunized women was 1:2. The opsonins of the babies were of a lower titer than those of their mothers; the ratio of the titers of the babies to those of their nonimmunized mothers was 1:2.2, and the corresponding ratio for the immunized group was 1:15. With respect to the babies, the ratio for the nonimmunized to the immunized group was 1:2.9. These results indicate that placental transfer of pertussis circulating antibodies does occur and that the higher the level in the mother, the more nearly does the titer of her baby approach her own.

American Journal of Psychiatry, New York 102:1-144 (July) 1945

- Development of Statistics of Mental Disease in United States During Past Century. H. M. Pollock.—p. 1.
*Effects of Psychologic Deprivation in Infancy and Subsequent Stimulation. W. Goldfarb.—p. 18.
Clinical and Electroencephalographic Studies of Changes of Cerebral Function Associated with Variations in Blood Sugar. H. Strauss and I. S. Wechsler.—p. 34.
Factors Affecting Electroencephalogram of Patients with Neurosyphilis. M. Greenblatt and S. Levin.—p. 40.
Electroencephalographic and Clinical Effects of Electrically Induced Convulsions in Treatment of Mental Disorders. B. K. Bagchi, R. W. Howell and H. T. Schmale.—p. 49.
Amnesic Confabulatory Syndrome (Korsakoff Psychosis) Following Head Injury. A. P. Friedman and C. Brenner.—p. 61.
Spontaneous and Induced Epileptiform Attacks in Dogs, in Relation to Fluid Balance and Kidney Function. F. M. Allen.—p. 67.
Psychiatric Study of Absence Without Leave. M. S. Guttmacher and M. A. Stewart.—p. 74.
Delinquents in Army: Statistical Study of 500 Rehabilitation Center Prisoners. A. J. N. Schneider and C. W. LaGrone Jr.—p. 82.
The Sexual Psychopath in Military Service: Study of 270 Cases. L. H. Loewer.—p. 92.
Psychiatric Objectives in Army. W. C. Menninger.—p. 102.
Delayed Action of Insulin in Schizophrenia. F. J. Braceland, L. J. Medina and J. A. Vaichulis.—p. 108.
Observations on Private Practice of Psychiatry. W. Muncie.—p. 111.

Psychologic Deprivation in Infancy.—A group of 15 children admitted to an institution in early infancy and remaining under institutional care for an average of thirty-two months was later transferred to foster homes. These children were paired with children who had been in foster homes and had not had other than family rearing. All the children were given

tests of intellect, language, motor coordination, social maturity and personality. Data were first gathered when the institution children were still in the institution and again after they had been in foster homes for seven months. In the first series of tests the institution children were inferior to the foster home children in intellectual performance in activities with requirements for both verbal and nonverbal reaction, in vocabulary and in language. The mean intelligence of the institution children was inferior in terms of a normal group, while the mean intelligence of the foster home group was within the average ranges. The institution children tended to be more removed in their reaction to the examiner and to the test material. The Rorschach test results tended to confirm their general immaturity in comparison to the foster home children. There were no differences in social maturity or in motor coordination. In no area were the institution children superior to the foster home children. After the institution children had had seven months of placement experience the foster home children were still superior in intellectual performance and in language performance. The institution children were no longer differentiated from the foster home children in such qualities as friendliness to strange adults and curiosity and interest in material objects. Relative to their age group, the institution children dropped in social maturity following the foster home experience. This may be due to the trauma of separation from the familiar environment. That the institution child's initial experience in placement did not diminish the gap in mental performance between institution child and foster home child seems to strengthen the hypothesis that psychologic deprivation in infancy produces a lag in mental growth which is maintained even under new conditions of enriched stimulation. The language deficiency of the institution children is a factor retarding them. An extensive period of deprivation of babies in an infant institution is profoundly detrimental to their psychologic growth.

American Journal of Tropical Medicine, Baltimore 25:177-292 (May) 1945

- Malaria and Filariasis in Returning Serviceman. L. T. Coggeshall.—p. 177.
*Clinical and Public Health Aspects of Malaria in the United States: from a Historical Perspective. E. C. Faust.—p. 185.
Laboratory Studies of Saimiri Hemagogus Cycle of Jungle Yellow Fever. M. Bates and M. Roca Garcia.—p. 203.
*Immunization Against Yellow Fever: Studies on Time of Development and Duration of Induced Immunity. K. C. Smithburn and A. T. Mahaffy.—p. 217.
Studies on Cyclic Passage of Yellow Fever Virus in South American Mammals and Mosquitoes: Marmosets (*Callithrix Aurita*) and Cebus Monkeys (*Cebus Versutus*) in Combination with *Aedes Aegypti* and *Hemagogus Equinus*. Mary B. Waddell and R. M. Taylor.—p. 225.
Isolation of Yellow Fever Virus from Wild Caught Marmosets. H. W. Laemmert Jr. and L. De Castro Ferreira.—p. 231.
Teaching of Tropical Medicine in the United States. L. E. Napier.—p. 233.
Chemotherapy of Experimental Histoplasmosis in White Mice. B. M. Levy.—p. 241.
Experiments to Determine Potential Mosquito Vectors of *Wuchereria Bancrofti* in Continental United States. W. L. Newton, W. H. Wright and I. Pratt.—p. 253.
Tests of Mercury and Antimony Compounds in *Dirofilaria Immitis* and *Litomosoides Carini* Infections. A. H. Lawton, F. J. Brady, A. T. Ness and W. T. Haskins.—p. 263.
*Chemotherapy of Human Filariasis by Administration of Neostibosan. J. T. Culbertson, H. M. Rose and J. Oliver Gonzalez.—p. 271.
Penicillin Treatment of Early Yaws. R. R. Tompsett and G. L. Kauer.—p. 275.
Survival Time of Trophozoites of *Endameba Histolytica* and Its Practical Significance in Diagnosis. H. Tsuchiya.—p. 277.
Ichthyotoxism—Fish Poisoning: Report and Review. R. K. C. Lee and H. Q. Pang.—p. 281.

Malaria in the United States.—During the recent war the malaria case rate in soldiers who had not been outside the continental United States has constituted a small fraction of that in the first world war. This has been due to efforts within the posts and those of public health agencies immediately around the camps. This joint control has also had its favorable effects on the nearby civilian communities. Because of suppressive chemotherapy in hyperendemic malarious areas of military operations outside the continental United States, materially aided by malaria surveys and control operations, malaria is no longer a serious clinical problem within controlled military zones. Moreover, falciparum malaria is usually liquidated by adequate

suppressive treatment, but vivax malaria is subject to repeated relapses up to two years. Thus, vivax cases among military personnel returning to the United States constitute a potential hazard. In addition, civilians and merchant seamen who have not been under strict military discipline and have been exposed to malaria overseas constitute a grave potential risk. Faust stresses the need for (1) more extensive consciousness of malaria in patients appearing for consultation and treatment, not only in highly endemic territory but in areas of milder endemicity and in nonmalarious regions; (2) increased accurate blood-film diagnosis; (3) treatment of all malaria patients with adequate amounts of antimalarial drugs until cure is effected; (4) inquiry by all physicians consulted by veterans, merchant seamen or civilians who have been overseas, regarding a history of malaria or exposure to malaria, and notification to local health authorities of potential malaria carriers; (5) a minimum food ration for the poorer elements of our population which is quantitatively and qualitatively adequate to produce resistance to disease, and (6) serious consideration of the advisability of instituting suppressive antimalarial therapy to populations in hyperendemic foci.

Immunization Against Yellow Fever.—Smithburn and Mahaffy found that protective antibody against yellow fever virus is demonstrable in the serum of rhesus monkeys within six or seven days after inoculation with standard 17D yellow fever vaccine virus. Rhesus monkeys are completely resistant to the inoculation of highly virulent pantropic yellow fever virus within five or six days after injection of 17D vaccine. This resistance is present prior to the appearance in the serum of demonstrable protective antibody. Protective antibody is demonstrable in man in a high percentage of cases by the tenth day after injection of 17D vaccine and may be present as early as the seventh day. Postvaccination surveys of immunity were made in persons inoculated in Africa with 17D vaccine and revealed the following: 1. Of the military personnel sampled one to twenty-two months after vaccination, 92.2 per cent exhibited protective antibody. 2. Ninety per cent of civilians inoculated in Kenya exhibited protective antibody in their serums twenty-three to thirty-six months after receiving the vaccine. 3. More than 90 per cent of persons vaccinated in Uganda had protective serums after three years, and there was no decline in the incidence of immunity during the third year. 4. The percentage of children who became immune as the result of inoculation was as great as that in adults, and the antibody response was equally well maintained.

Chemotherapy of Human Filariasis.—Thirty patients with filariasis (*Wuchereria bancrofti*) were treated with neostibosan for intervals ranging from thirty-three to forty-eight days. By the sixth month after treatment had ended, microfilariae had disappeared from 7 of the patients and had declined in all but 1 patient. In 15 of the 30 treated patients, over 80 per cent of the microfilariae were lost during the six months of observation. Among 15 control untreated patients with filariasis, followed for the same period as those under treatment, 13 showed an increase in microfilarias, 1 showed a small decline and 1 presented no change in the number of circulating parasites.

Archives of Ophthalmology, Chicago

34:1-82 (July) 1945

- Enucleation of Eyeball: Practical Suggestions for Obtaining Satisfactory Cosmetic Results. D. B. Kirby.—p. 1.
- Precisional Errors in Measurement of Squint and Phoria. O. A. Putnam and J. V. Quereau.—p. 7.
- Clinical Use of Ophthalmic Prisms (Metric). L. H. Hardy.—p. 16.
- *Cataract and Other Congenital Defects in Infants Following Rubella in Mother. J. C. Long and R. W. Danielson.—p. 24.
- *Evaluation of Toxoplasma Neutralization Tests in Cases of Chorioretinitis. J. M. Heidehman.—p. 28.
- Herpes Zoster Ophthalmicus: Report of Cases and Review of Literature. A. E. Edgerton.—p. 40.

Cataract and Other Congenital Defects Following Rubella in Mother.—Long and Danielson report 6 cases in which mothers had contracted rubella when from two to six weeks pregnant. Three of the babies born to them presented bilateral cataracts which were associated with bilateral microphthalmos. Three babies had unilateral microphthalmos with a distinctive type of cataract in the smaller eye. Lesions were

observed in the fundi in the three eyes of this series in which the fundus could be seen. All 6 children had cardiac defects. There was 1 case each of talipes valgus, cryptorchism, hypospadias and dacryostenosis. The authors believe that the cataracts, the microphthalmos, the lesions of the fundus and the cardiac defects are the result of intrauterine damage by rubella.

Toxoplasma Neutralization Tests in Chorioretinitis.—Heidehman performed 269 neutralization tests in serums from 211 persons. These serums were obtained from patients with various forms of uveitis or other types of congenital or acquired ocular disease and from normal persons, including parents of patients with congenital chorioretinitis. Strong to moderate neutralization of Toxoplasma was obtained with the serum of 63 per cent of 27 patients with congenital chorioretinitis, 14 per cent of 97 patients with anterior or posterior uveitis and 10 per cent of 58 normal persons other than the parents of infants or children with congenital chorioretinitis. Of 9 patients with congenital chorioretinitis and other evidence of toxoplasmosis, only 5 had antibodies. Antibodies were present in 6 of 7 mothers of patients with congenital chorioretinitis. It would appear that the demonstration of the neutralizing antibody should be considered a factor of moderate diagnostic value only in patients with congenital chorioretinitis. Its absence from serum does not rule out the possibility of toxoplasmic infection. The neutralizing antibody is of low titer, is thermolabile and shows a tendency to disappear from the blood serum in a few weeks, although it may persist for fifteen months or longer, possibly even indefinitely in some cases. Aside from possible instances of familial infection, Toxoplasma neutralizing antibodies may be demonstrated in 10 to 14 per cent of persons without clinical manifestations of toxoplasmosis as the disease is at present understood. It is probable that in some of these persons the antibodies are nonspecific.

Canadian Medical Association Journal, Montreal

53:1-98 (July) 1945

- Results of Penicillin Therapy: Report for Joint Services Penicillin Committee. R. P. Farquharson, P. Greey and S. R. Townsend.—p. 1.
- Sulfonamide Dermatitis. N. M. Wong.—p. 9.
- Chronic Post-Traumatic Head Symptoms. W. D. Ross and F. L. McNaughton.—p. 12.
- Right Colon Resection. R. V. B. Shier.—p. 18.
- Anesthesia in the Aged. E. H. Watts.—p. 20.
- Sodium Pentothal in Major Orthopedic Surgery. L. M. Hampton.—p. 25.
- Distribution of Rh Factor in Jewish Mothers and Infants and Incidence of Hemolytic Anemia in Jewish Newborn Infants. H. Lubinski, B. Benjamin and G. J. Stream.—p. 28.
- Avoidance of Untoward Effects of Estrogenic Therapy in Menopause. J. S. Henry.—p. 31.
- Drainage of Common Duct in Obstructive Jaundice (Cholelithiasis). J. C. Schwartzman and E. Bien.—p. 37.
- Tuberculosis of Brain. M. H. Campbell.—p. 41.
- Methyl Bromide Poisoning: New Industrial Hazard. N. Viner.—p. 43.
- Recognition and Prevention of Late Toxemia of Pregnancy in Its Incipient Stages. H. F. Dyer.—p. 45.
- Endometriosis. D. M. Low.—p. 49.
- Adenoma of Liver. A. Branch, D. J. Tanning and G. F. Skinner.—p. 53.

Cancer Research, Baltimore

5:449-496 (Aug.) 1945

- Fluorescence Studies of Carcinogens in Skin: II. Mouse Skin After Single and Multiple Applications of 20-Methylcholanthrene. W. L. Simpson and W. Cramer.—p. 449.
- Changes in Epidermal Cholesterol During Methylcholanthrene Carcinogenesis in Mice. L. F. Wicks and V. Sontzeff.—p. 464.
- Further Studies on Mode of Origin of Carcinomas of Skin. R. A. Willis.—p. 469.
- Effect of 3,4-Benzpyrene on Autoxidation of Unsaturated Fatty Acids. G. C. Mueller and H. P. Kusch.—p. 480.
- Testing Carcinogen Analogues for Carcinogenic Activity. E. C. Dodds, W. Lawson and P. C. Williams.—p. 485.

Hawaii Medical Journal, Honolulu

4:285-338 (July-Aug.) 1945

- Diagnosis and Treatment of Bronchogenic Carcinoma. H. D. Adams.—p. 287.
- Diagnosis of Cancer of Gastrointestinal Tract. A. C. Clasen.—p. 290.
- Surgical Treatment of Cancer of Gastrointestinal Tract. H. K. Gray.—p. 296.
- Transient Pulmonary Infiltrations (Loeffler's Syndrome): Report of Case. H. C. Gotshalk.—p. 302.

Journal of Infectious Diseases, Chicago

77:1-84 (July-Aug.) 1945

- Sylvatic Plague Studies: V. Determination of Vector Efficiency. C. M. Wheeler and J. R. Douglas.—p. 1.
- Intraspinal Inoculation of Infective Human Stools as Method of Producing Poliomyelitis in Monkey. J. L. Melnick, Dorothy M. Horstmann and R. Ward.—p. 13.
- Studies on Immunization of Guinea Pigs Against Brucella Infection. I. Live, F. G. Sperling and E. L. Stubbs.—p. 16.
- Types of Eberthella Typhosa Found in Georgia During Four Year Period 1941-1944. Janie F. Morris, Alice Brim and T. F. Sellers.—p. 25.
- In Vitro Opsonic Tests with Plasmodium Gallinaceum and Plasmodium Lophurae. A. Zuckerman.—p. 28.
- *Precipitation Test in Infective Hepatitis. L. Olitzki and H. Bernkopf.—p. 60.
- Problem of "Dangerous Carrier" of Hemolytic Streptococci: I. Number of Hemolytic Streptococci Expelled by Carriers with Positive and Negative Nose Cultures. M. Hamburger Jr., Margaret J. Green and Virginia G. Hamburger.—p. 68.
- Studies of Nutrition and Avian Malaria: III. Deficiency of "Folic Acid" and Other Unidentified Factors. A. O. Seeler and W. H. Ott.—p. 82.

Precipitation Test in Infective Hepatitis.—Olitzki and Bernkopf found that 94 of 102 serums from patients with infective hepatitis gave a positive precipitin reaction with cholesterolized alcoholic extracts of liver or spleen tissue treated with ether. Antigens from normal subjects as well as from infective hepatitis cases elicited a positive reaction. Sixty-four of 330 serums from subjects with diseases other than infective hepatitis gave positive reactions. Nearly all the nonspecific positive reactions could be eliminated by prior heating of the serum (fifteen minutes at 60 C.). There is a considerable difference in antibody content between hepatitis serum and positive serums from other sources. Eighty-six per cent of the hepatitis serums gave a positive reaction even when 0.02 cc. or less of serum was employed in the test, whereas serums from other origins failed in most cases to elicit a precipitation reaction when less than 0.1 to 0.05 cc. of serum was employed. Although the test does not conform with the strict requirements of serologic diagnosis, it nevertheless demonstrates a considerable serum difference between serums of persons with infective hepatitis and those with other conditions.

Journal of Investigative Dermatology, Baltimore

6:191-234 (June) 1945

- Group Specificity of Epidermal Allergy to Procaine in Man. S. Rothman, F. J. Orland and P. Flesch.—p. 191.
- Studies on Eczematous Sensitizations: Specificity of Sensitization from Point of View of Chemical Configuration. A. Rostenberg Jr. and N. M. Kanof.—p. 201.
- Testing of Fungicides Insoluble in Water. A. B. Hillegas and E. Camp.—p. 217.
- Certain Statistical Considerations in Patch Testing. C. R. Henderson and E. C. Riley.—p. 227.
- Note on Statistical Probabilities of Finding Hypersensitive Subjects in Random Samples. Lila F. Knudsen.—p. 231.

J. Neuropathology & Exper. Neurology, Baltimore

4:195-304 (July) 1945

- Nucleus Eminentiae Teretis, Corpus Pontobulbare and Their Fiber Connections: Studies in Abnormally Developed and Pathologic Cases. O. Marburg.—p. 195.
- Cerebral Changes in Course of Pernicious Anemia and Their Relationship to Psychic Symptoms. A. Ferraro, S. Arieti and W. H. English.—p. 217.
- *Histopathology of Muscles in Spinal Type of Progressive Muscular Atrophy. G. B. Hassin and W. Dublin.—p. 240.
- Cerebral Hemiatrophy (Diffuse Sclerotic Type of Schob). II. Josephy.—p. 250.
- Reparative Processes in Subarachnoid Hemorrhage. B. J. Alpers and F. M. Forster.—p. 262.
- *Western Equine Encephalitis: Pathogenesis of Pathologic Lesions. II. H. Noran and A. B. Baker.—p. 269.
- Physiochemical Effects of Electrically Induced Convulsions: Cerebrospinal Fluid Studies. M. Spiegel-Adolf, E. A. Spiegel, E. W. Ashkenaz and A. J. Lee.—p. 277.
- Hemangioma of Medulla Oblongata. C. I. Owen, J. E. Webster and E. S. Gurdjian.—p. 291.
- Focal Autonomic Representation in Cortex and Its Relation to Sham Range. Margaret A. Kennard.—p. 295.

Histopathology of Muscles in Progressive Muscular Atrophy.—Hassin and Dublin obtained material from a typical case of Aran-Duchenne's type of progressive muscular atrophy. They stress that progressive muscular atrophy, type Aran-

Duchenne, and progressive muscular dystrophy are the most common forms of muscular wasting. Both types possess some features that are alike but differ in their intensity and extensivity. In progressive muscular atrophy the spinal cord is severely involved, which is not the case in progressive muscular dystrophy. In both the changes are degenerative, analogous to those obtaining in muscle fibers divided by a sharp instrument. The degenerative changes in the muscles are accompanied by phenomena of myophagia, in analogy to those of neuronophagia observed in damaged central nerve fibers. The function of the myophages is like that of neuronophages, to remove the damaged tissue and render it harmless. Signs of mesodermal reaction—multiple scar formation—are absent in progressive muscular atrophy, and signs of fatty transformation (lipomatosis) are more manifest in cases of progressive muscular dystrophy. Pathologic changes justify the opinion that, in spite of the presence of Heubner's endarteritis, syphilis is not the cause of progressive muscular atrophy.

Pathologic Lesions in Western Equine Encephalitis.

According to Noran and Baker the western variety of equine encephalitis has been recognized as one of the most prevalent forms of encephalitis. In the summer of 1941 alone 1,700 cases were recorded in Minnesota and North Dakota. The lesions may be progressive, resulting in a chronic form of this illness, especially in infants and children. The authors describe the pathologic picture of a case of chronic encephalitis in which cysts had replaced both frontal lobes and were separated from one another by glial tissue. The rest of the brain presented widespread parenchymal changes consisting of diffuse and focal areas of demyelination. The vascular involvement varied from collars of perivascular infiltrates to the narrowing and occlusion of the vessels by an endothelial proliferation. Vascular calcification was prominent. In another case a progressive encephalitis had been present since infancy and had shown intermittent activity over a period of many years. At necropsy the lesions were identical to those observed in their first case. Since the Midwest epidemic of equine encephalitis of 1941 the authors have obtained brain tissue from 10 cases; 6 were obtained during the acute phase, 1 during the subacute phase and 3 during the chronic stage of the illness. The development of the main lesions could be traced through the acute, subacute and chronic stages of the disease with fair accuracy. The results suggested that the vascular alterations were primary and indicated that the parenchymatous lesions were principally secondary to the resultant cerebral ischemia. The extreme prominence of pathologic changes in the blood vessels points to a vascular spread of the equine virus.

Journal of Nutrition, Philadelphia

30:1-58 (July) 1945

- Nutritional Value of Telang Livers. P. L. Pavcek, E. J. Herbst and C. A. Elvehjem.—p. 1.
- Biomicroscopy of Eyes in Evaluation of Nutritional Status: Conjunctival Changes. R. K. Anderson and D. F. Milam.—p. 11.
- Id.: Corneal Vascularization. R. K. Anderson and D. F. Milam.—p. 17.
- Thiamine, Riboflavin and Nicotinic Acid Retention in Preparation of Overseas Hams and Bacon. H. P. Sarett and V. H. Cheldelin.—p. 25.
- *Riboflavin, Niacin and Thiamine Content of Dried Leguminous Seeds. Louise Daniel and L. C. Norris.—p. 31.
- Nutritional Studies with the Duck: I. Purified Rations for the Duck. D. M. Hegsted and F. J. Stare.—p. 37.
- Studies on Requirements of Monkey for Riboflavin and New Factor Found in Liver. J. M. Cooperman, H. A. Waisman, K. B. McCall and C. A. Elvehjem.—p. 45.

Riboflavin, Niacin and Thiamine Content of Leguminous Seeds.—Daniel and Norris investigated the riboflavin, niacin and thiamine content of dried leguminous seeds. Seventeen varieties of legumes were analyzed. Two different methods were used for determining each vitamin in one sample of every variety of legume. Agreement was found in all cases. The methods used were the fluorometric method for riboflavin, the microbiologic method for niacin and the thiochrome method for thiamine. The results indicate that legumes are an excellent source of thiamine and a good source of niacin and riboflavin. With a few exceptions the greatest amount of all three vitamins is found in the soybean, thus substantiating its high status in the list of foods.

Journal Pharmacology & Exper. Therap., Baltimore

84:93-196 (June) 1945

- Experimental and Clinical Studies on Action of High Doses of Ilykinone and Other Menadiene Derivatives. R. K. Richards.—p. 93.
- Studies on General Pharmacology of Dibutoline. R. M. Featherstone and N. G. White.—p. 105.
- Effect of Route of Administration on Detoxication of Selenium by Arsenic. A. J. L. Moxon, C. R. Paynter and A. W. Halverson.—p. 115.
- Antibacterial Activity of Penicillin in Experimental Infections of Mice with *C. Diphtheriae*. N. Ercoli, M. N. Lewis and Lucille J. Moench.—p. 120.
- Preparation of Extracts from Oxidized Marine and Other Oils for Reducing Blood Pressure in Experimental and Human Chronic Hypertension. A. Grollman.—p. 128.
- Para-Aminohippuric Acid: Its Pharmacodynamic Actions. K. H. Beyer, P. A. Mattis, Elizabeth A. Patch and H. F. Russo.—p. 136.
- Toxicologic Manifestations and Pathologic Findings Following Administration of Para-Aminohippuric Acid. P. A. Mattis, K. H. Beyer, S. E. McKinney and Elizabeth A. Patch.—p. 147.
- Effects of Anesthesia on Glucose Tolerance in Man. M. Stern, E. M. Papper, E. Bueding and E. A. Rovenstine.—p. 157.
- Pharmacologic Action of Benzamides and Benzamidoximes. G. S. Dawes.—p. 160.
- Method for Assay of Atropine Substitutes on Salivary Secretion. E. Bulbring and G. S. Dawes.—p. 177.
- Comparison of Pharmacologic Action of Quinidine and Dihydroquinidine. C. C. Scott, R. C. Anderson and K. K. Chen.—p. 184.
- Some Effects of Tetraethyl Ammonium on Mammalian Heart. G. H. Acheson and G. K. Moc.—p. 189.

Medical Annals of District of Columbia, Washington

14:287-338 (July) 1945

- 1944 Poliomyelitis Epidemic: Analysis of Cases Seen at Children's Hospital, Washington. D. C. P. A. McLendon, J. S. Wall, W. S. Anderson, F. M. Hand and R. H. Todd.—p. 287.
- Acute Poliomyelitis: Study of Patients Seen in Gallinger Municipal Hospital During 1944. M. J. Howell and H. L. Feffer.—p. 294.
- How Is a Depression Diagnosed? I. Rodis.—p. 305.

14:339-392 (Aug.) 1945

- Clinical Value of Physical Medicine. G. M. Piersol.—p. 339.
- New Aspects of Venereal Disease Control. J. R. Heller Jr.—p. 351.
- Fallacy of Use of Intraperitoneal Sulfanilamide in Treatment of Perforative Appendicitis. O. C. Cox and H. J. Forrest.—p. 354.
- Public Opinion Will Determine Medicine's Future. J. S. Lawrence.—p. 356.

Michigan State Medical Society Journal, Lansing

44:641-768 (July) 1945

- Pathology of Rickettsial Disease. R. A. Moore.—p. 691.
- Bronchial Asthma. A. S. Friedlaender.—p. 696.
- Need for Cancer Education in Secondary Schools. F. L. Rector.—p. 702.
- Penicillin in Ophthalmology. N. Bentley.—p. 706.
- Spontaneous Hypoglycemia. H. L. Smith and E. Estes.—p. 711.

44:769-872 (Aug.) 1945

- *Kidney Function in Essential Hypertension. E. M. Isberg and P. S. Barker.—p. 817.
- Rehabilitation of the Blind: Plan for State of Michigan. J. O. Wetzel.—p. 820.
- Ringworm of Scalp Caused by *Microsporon Audouini* in Monroe County. H. Pinkus.—p. 823.
- Acute Appendicitis Occurring in Hernial Sac of 2½ Weeks Old Child. C. B. Loranger.—p. 827.

Kidney Function in Hypertension.—At the University Hospital of Ann Arbor, Mich., clinical estimates of kidney function are based on the composite of three tests: (1) examination of the urine for protein, casts and cells, (2) the urea clearance test and (3) the maximal concentration test. In studies on the renal function of 200 patients with essential hypertension it was found that repeated negative urinalyses are not sufficient evidence to assume that kidney function is normal. In 28 per cent of the patients included in this study renal function was impaired even though the urine showed no abnormalities on routine examination. The combination of normal maximum concentrating ability and normal urinalysis is a sufficient clinical indication of unimpaired renal function. The concentration test is more sensitive than the urea clearance test in detecting early kidney damage in essential hypertension. Thirty-three per cent of the series showed impaired concentrating ability in the presence of normal urea clearance values, while in only 3 per cent was the concentrating ability adequate in the presence of subnormal urea clearance.

New England Journal of Medicine, Boston

233:199-228 (Aug. 16) 1945

- *Treatment of Rheumatoid Arthritis with 417 Courses of Gold: Analysis of 259 Cases. A. Cohen, J. Goldman and A. W. Dubbs.—p. 199.
- *Active Immunization Against Scarlet Fever. M. M. Glazier.—p. 204.
- Spontaneous Rupture of Normal Spleen: Report of Case. H. Duby.—p. 207.
- Practical Aspects of Oxalate Metabolism. H. Jeghers and Rosemary Murphy.—p. 208.
- Multilocular Cystoma of Pancreas. M. C. Sosman.—p. 216.
- Subacute Glomerulonephritis: Hemorrhagic Pulmonary Edema. W. W. Backman.—p. 220.

Gold Compounds in Treatment of Rheumatoid Arthritis.—Cohen and his collaborators administered from 1 to 5 courses of gold compounds in the treatment of 259 patients with rheumatoid arthritis for a total of 417 courses. They found that the administration of 300 mg. of ascorbic acid daily did not reduce untoward reactions in 65 patients receiving 118 courses of gold compounds. Vitamin B complex was not a factor in reducing untoward reactions in 29 patients receiving 66 courses. The improvement was no greater in the groups receiving vitamins as an adjunct than it was in the group of 43 patients receiving 57 courses of gold compounds alone. There was one fatality due to thrombocytopenic purpura. Because of objective improvement in 88 per cent of the various courses of treatment, gold preparations are recommended for the treatment of rheumatoid arthritis, but extreme caution must be exercised. A normal sedimentation rate is not necessarily a contraindication to gold therapy. An increasing sedimentation rate during treatment is not always an indication that clinical improvement is not to be expected. There were untoward reactions in 10.3 per cent of 417 courses of treatment. There were untoward reactions in only 8.9 per cent of 259 patients receiving a single course of gold treatment. In the 96 patients receiving 2 courses the incidence of untoward reactions rose to 15.6 per cent.

Active Immunization Against Scarlet Fever.—Glazier describes a modification of Dick's method which results in fewer general reactions and a higher degree of immunity. He divided 28 patients into three groups during 1933 and 1934 and immunized by means of six, seven and eight injections respectively given at intervals of one, two and three weeks. The most effective method with the lowest incidence of general reactions was that of seven consecutive weekly injections. This method was employed in immunizing 340 children in subsequent years. The injections were given subcutaneously in doses of 650, 2,500, 5,000, 10,000, 25,000, 55,000 and 110,000 units, a total of 208,150 units. If a moderate or severe general reaction occurred, the same dose was repeated the following week. The injections were stopped if an allergic reaction occurred. Immunization was conducted during the spring or fall, preference being given to the late spring. Of 2,357 injections given, only 166 (7 per cent) produced general reactions. The most frequent of these was nausea and vomiting. Immunity, as evidenced by a negative Dick test, was complete in 98.9 per cent of the children, a repeat injection being given to the others. With such a high percentage of immunity, a follow-up Dick test is probably unnecessary. None of the 340 patients developed scarlet fever. The best age to immunize actively for scarlet fever is between 1 and 2 years. The incidence of general reactions was lowest in this group. Since there is a scarlet fever susceptibility of over 90 per cent at this age, an initial Dick test is not necessary. A history of allergic sensitivity is not a contraindication to immunization.

Pennsylvania Medical Journal, Harrisburg

48:1009-1120 (July) 1945

- Eczema. E. W. Netherton.—p. 1025.
- Therapy for External Ocular Conditions. W. I. Lillie.—p. 1032.
- Evaluation of Liver Function Tests. J. F. Monaghan.—p. 1036.

48:1121-1216 (Aug.) 1945

- Some Effects of War on Child Health in Pennsylvania. J. A. Gil-martin.—p. 1137.
- Meningitis in Children. H. T. Price.—p. 1146.
- Primary Carcinoma of Female Urethra, with Especial Reference to Lesion Known as Urethral Caruncle. E. Hess.—p. 1150.
- Practical X-Ray Pelvimetry. A. E. Colcher and W. Sussman.—p. 1156.
- Chronic Suppurative Otitis Media. H. J. Williams.—p. 1159.
- Study of Infant Mortality. R. R. MacDonald.—p. 1162.

Public Health Reports, Washington, D. C.**60:885-916 (Aug. 3) 1945**

Study of Rodent-Ectoparasite Population of Jacksonville, Fla. A. S. Rumreich and R. S. Wynn.—p. 885.

60:917-944 (Aug. 10) 1945

*Tests of Effectiveness of DDT in Anopheline Control. S. W. Simmons.—p. 917.

60:945-972 (Aug. 17) 1945

Cross Immunity Between Four Strains of Tsutsugamushi Disease (Scrub Typhus). N. H. Topping.—p. 945.

New Reaction Time Apparatus and New Method of Administering Reaction Time Test. R. B. Malmo and L. R. Crisp.—p. 947.

Geographic Distribution of Rocky Mountain Spotted Fever and Nuttall's Cottontail in Western United States. W. L. Jellison.—p. 958.

60:973-1004 (Aug. 24) 1945

Birth Statistics as Index of Interdependence of Counties with Regard to Medical Services. A. Ciocco and M. E. Altenderfer.—p. 973.

Second Report on Control of Anopheles Quadrimaculatus Say in Water Chestnut Areas of Potomac River, 1944. M. M. Price and F. E. Lyman.—p. 985.

Effectiveness of DDT in Anopheline Control.—An average tenant house can be treated with a DDT residual spray at a cost of from \$1.50 to \$1.75, including labor, materials and overhead but exclusive of the initial outlay for heavy equipment. One treatment a year might be sufficient in the more northern malaria zones of this country, but two treatments will probably be required in the southern zones. Residual sprays do not give as effective a kill in occupied houses, not because of lack of toxicity but because of the large proportion of untreated resting places such as furniture, bedding and exposed wearing apparel. Treatment of household effects is advised where practical. Treated wood surfaces exposed to 14 inches of rainfall over a period of four weeks effected a 25 per cent kill compared with a 75 per cent kill obtained from control panels. Sunlight alone caused a reduction in toxicity of 10 per cent over the same period. When applied as a spray at the rate of $\frac{3}{4}$ pound of DDT per acre, essentially 100 per cent larva kills were obtained. Materials for effective larviciding with DDT cost less than one fifth as much as a comparable effective application of fuel oil.

Review of Gastroenterology, New York**12:241-320 (July-Aug.) 1945**

Chronic Pancreatitis. J. O. Bustos.—p. 263.

Case of Uremic Diarrhea. F. H. Voss.—p. 279.

Neurofunctional Spasm. B. M. Bernstein and A. J. Brenner.—p. 285.

Biliary Circulation. J. Carrere.—p. 288.

Iodameba Butschlii: Parasitologic, Clinical and Radiologic Study.

J. Raifman.—p. 293.

Southern Medical Journal, Birmingham, Ala.**38:505-564 (Aug.) 1945. Partial Index**

Sporotrichosis: Report of 4 Clinically Atypical Cases. L. M. Smith.—p. 505.

*Pathology of Bronchial Asthma, with 5 Autopsy Reports. L. Unger.—p. 513.

Is Oral Pollen Therapy Dependable? N. F. Thiberge.—p. 523.

Some Experiences with Mild Foreign Protein in Treatment of Chronic Uveitis. B. Y. Alvis.—p. 527.

Pathogenesis of Atopic Eczema. F. A. Simon.—p. 530.

Management of Migraines. V. J. Derbes, H. T. Engelhardt and T. A. Watters.—p. 533.

Pelvic Tumors. W. T. Pride.—p. 539.

Comparison of Cephalin Flocculation Test with Some Other Tests of Liver Function. W. M. Nicholson, H. S. John and H. M. Taylor.—p. 541.

Future of Periodic Health Examination. H. R. Leavell.—p. 549.

General Practitioner: Opportunity and Responsibility. W. L. Pressly.—p. 552.

Effects of War on Medical School Library. M. A. Murphy.—p. 555.

Pathology of Bronchial Asthma.—Unger reports post-mortem observations on 5 cases in which death occurred in uncomplicated asthma. Emphysema was present in all 5, being present even in the 1 year old child who had asthma for only nine months. Plugging of the bronchi was present in the first 4 cases (the lungs in case 5 were not sectioned), and undoubtedly this obstruction is a very important cause of asthma. Morphine was used in cases 3 and 4, and death followed promptly. Morphine is too dangerous a drug to use in bronchial asthma because it prevents expectoration of mucous plugs. It also harms by depressing the cerebral respiratory center, with resul-

tant slowing of respiration in a patient already short of oxygen. Microscopically the usual findings at death during a paroxysm are thickening and hyalinization of the basement membrane of the bronchi, eosinophilic infiltration of the bronchial and peribronchial tissues (the mucous plugs may also contain eosinophils) and excessive mucus in the lumens, varying from thin serous material to thick black obstructing plugs. In the lumens there may also be Charcot-Leyden crystals, Curschmann spirals, fibrin, erythrocytes and desquamated epithelial, round and polymorphonuclear cells. The epithelial lining may be normal or may be partially stripped off. The goblet and mucous cells are either increased or degenerated. The muscular layer is often thickened in chronic cases. The smaller bronchi and the alveoli may be more or less enlarged, depending on the degree of emphysema. As they enlarge, their lining usually thins. The submucosal layer is often widened, and there may be thickening of vessel walls.

Surgery, St. Louis**18:133-266 (Aug.) 1945**

Resection of Duodenum and Head of Pancreas for Primary Carcinoma of Head of Pancreas and Ampulla of Vater. W. H. Cole and J. T. Reynolds.—p. 133.

Pancreaticoduodenectomy for Carcinoma of Ampulla and Ampullary Region. T. G. Orr.—p. 144.

Origin and Growth of Adenoma of Islands of Langerhans. L. P. Good.—p. 159.

Islet Cell Tumors of Pancreas. S. R. Maxeiner and H. E. Bundy.—p. 171.

Gastrojejunocolic Fistula. H. K. Ransom.—p. 177.

Carcinoma of Sigmoid and Rectosigmoid Involving Urinary Bladder: Surgical Management in 64 Cases. C. F. Dixon and R. E. Benson.—p. 191.

*Succinylsulfathiazole and Intestinal Suction in Surgery of Large Bowel. F. C. Newton and J. B. Blodgett.—p. 200.

Treatment of Advanced and Inoperable Cancer: Résumé of Current Trends Based on Review of Literature and Analysis of Personal Case Experiences. W. E. Howes and A. L. Shapiro.—p. 207.

Review of 101 Subtotal Gastrectomies for Benign Ulcer. R. L. Sanders.—p. 229.

Dicumarol in Prevention of Postoperative Thrombosis and Pulmonary Embolism. C. Reich, M. D. Yahr and C. Eggers, with technical assistance of Ruth Lipkin.—p. 238.

Retrograde Arteriography in Study of Abdominal Aorta and Iliac Arteries. P. L. Farinas.—p. 244.

Body Fluid and Plasma Protein Changes Following Single Nonfatal Hemorrhage in Hypoproteinemic Dogs. M. P. Pride, E. Muntwyler, Grace E. Griffin, F. R. Mautz and Lois Griffith.—p. 250.

Interscapulothoracic Disarticulation of Arm. J. K. Berman.—p. 256.

Succinylsulfathiazole and Intestinal Suction in Surgery of Large Bowel.—Newton and Blodgett observed the use of the Miller-Abbott tube and of succinylsulfathiazole in 114 cases of large bowel resection. The general preoperative and postoperative care was the same in all except that in the test group (36 cases) preoperative succinylsulfathiazole and preoperative and postoperative intestinal suction were used. In the control group (78 cases) primary colostomy without chemotherapy was the routine in resections with restoration of continuity. The Mikulicz type of resection was not required in any cases of the test group. The following data are of statistical significance in the comparison of the two groups: 1. The gross incidence of complications was reduced from 58 to 25 per cent. 2. The gross mortality was reduced from 19 to 3 per cent. 3. When similar operative procedures (resections and anastomoses) are compared, it is found that the incidence of postoperative infection is reduced from 43 to 6 per cent and the mortality is reduced from 22 to 3 per cent.

War Medicine, Chicago**8:1-72 (July) 1945**

Diseases and Defects in Aircrew Trainees. J. E. Leach.—p. 1.

Electroencephalogram in Syncopal Reactions: Collapse at 18,000 Feet Simulated Altitude in Low Pressure Chamber. O. Sugar.—p. 9.

Hysteria as Device to Prolong Hospitalization and Evade Military Duty. M. Levin.—p. 16.

Optical Service Units of Navy. J. P. Cowen.—p. 18.

Military Value of Standard Test of Heart Function with Electrocardiograms in Staging Area: Preliminary Report. A. A. Goldbloom and A. A. Dumanis.—p. 21.

Principles and Problems of Maintenance of Fighter-Bomber Pilots. E. S. C. Ford.—p. 26.

Psychiatric Study of Blast Injuries of Ear. L. Linn and M. H. Stein.—p. 32.

Penicillin Sodium in Treatment of Sulfonamide Resistant Gonorrhea in a Station Hospital. J. J. Kristal.—p. 34.

Campocormia: Functional Condition of Back in Neurotic Soldiers. S. A. Sandler.—p. 36.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

18:199-232 (July) 1945

- *Short Esophagus (Thoracic Stomach) and Its Association with Peptic Ulceration and Cancer. D. W. Smithers.—p. 199.
Results of Treatment in Series of Cases of Carcinoma of the Cervix. B. M. W. Dobbie.—p. 210.
Quantitative Analysis of Effect of Gamma Radiation on Malignant Cells in Vitro and in Vivo. I. Lasnitzki.—p. 214.
War Wounds of Head and Neck. D. B. McGrigor and E. Samuel.—p. 221.
Radiographic Investigation of Diaphragmatic Movements. A. A. Vickers.—p. 229.
Diverticulum of Stomach Found to Enter Left Inguinal Hernial Sac. J. B. Hartley.—p. 231.

Short Esophagus, Peptic Ulceration and Cancer.—Smithers advances a theory suggesting that both congenital shortening of the esophagus and acquired shortening due to cicatrization following ulceration are comparatively rare, and that the majority of the cases diagnosed as short esophagus radiologically are primarily cases of hiatus insufficiency associated with spasm of the longitudinal muscle fibers resulting from irritation due to flow of gastric juice into the esophagus. A lax hiatus may result either from a developmental deficiency due to delayed descent of the stomach or to a loss of elasticity of the tissues in later life. In most cases of "congenital short esophagus" the condition is not congenital and the esophagus is only shortened by spasmodic contraction. Two cases of short esophagus and cancer are added to those previously reported.

British Medical Journal, London

2:1-36 (July 7) 1945

- *Sulfonamide Rashes: Analysis of 500 Cases Seen in North Africa and Italy. G. A. G. Peterkin.—p. 1.
Prevention of Sea Sickness in Assault Craft: Report of Experiments Under Tropical Conditions. I. G. W. Hill and A. I. Guest.—p. 6.
Human Creeping Myiasis. Report of Case. R. G. Turner.—p. 11.
Abacterial Pyuria. H. Donovan.—p. 12.
Notes on Adder Bite (England and Wales) C. W. Wales.—p. 13.

2:37-74 (July 14) 1945

- Some New Developments in Morphophysiology of Cerebral Cortex. S. Sarkisov.—p. 37.
Dermatitis from Wearing Army Spectacles. W. O. G. Taylor and A. G. Fergusson, with special report by W. R. G. Atkins.—p. 40.
*Cerebral Fat Embolism After Electrical Convulsion Therapy. A. Meyer and D. Teare.—p. 42.
Pellagra in Morphine Addict. C. Comerford and B. H. Kirman.—p. 44.
Malaria Epidemics at Exceptionally High Altitudes in Kenya. P. C. C. Garnham.—p. 45.

2:75-108 (July 21) 1945

- Effects of High Altitude on Man. B. H. C. Matthews.—p. 75.
Irreparable Vesicovaginal Fistula in Iraq: Treatment by Ureterocolostomy. D. M. Douglas.—p. 78.
Otitis Externa. J. F. Birrell.—p. 80.
Penicillin Grown from Nutrient Medium Prepared from Potato Extract. J. O. Gavronsky.—p. 82.
Hypersensitivity to Transfused Blood. Sheila Callender, R. R. Race and Z. V. Paykoc.—p. 83.
Case of Nocturnal Hemoglobinuria. J. A. Milne.—p. 84.

Sulfonamide Rashes in North Africa and Italy.—Peterkin examined 650 cases of sulfonamide sensitization while in service in North Africa and Italy. Of the various drugs employed, sulfonamide seemed the most apt to cause reactions, especially if used in the form of powder. The whole group of sulfonamides seemed less likely to cause reactions if applied in the form of a thick paste or a water miscible cream. The reactions were due to the treatment of many different conditions from major wounds and burns to slight grazes, impetigo and chancroid. Only three of the sixteen types described by the author are liable to cause a grave or prolonged illness, i. e. the pemphigoid, the sulfonamide light eruption and the sulfonamide contact dermatitis. Sulfonamide light dermatitis accounted for 72.2 per cent and contact dermatitis and its complications for 17.2 per cent, i. e. 90 per cent of the total. Most cases of reaction were due to the use of sulfanilamide in powder form; the safest drugs appeared to be sulfadiazine and sulfa-

guanidine. Acriflavine can reactivate a sulfonamide light or contact dermatitis just as may cocaine. No race is exempt from this sensitization, skin color and texture making little or no difference. Sulfonamide reactions are uncommon in United States troops compared with British. This is due to the fact that the U. S. Medical Corps uses sulfonamides chiefly in the form of a 5 per cent sulfadiazine in a water miscible cream. The local application of sulfonamides is contraindicated in skin diseases, though there is little risk if the drugs are used with certain precautions. Intramuscular penicillin appears to be the treatment of choice in two types, the pemphigoid and the severe light dermatitis.

Cerebral Fat Embolism After Convulsion Therapy.—Meyer and Teare's patient, a man aged 53, had sustained gunshot wounds at the back of the right knee during the war of 1914-1918 and now complained of severe pain in this knee, with inability to straighten the leg. Under sodium amylal and suggestion therapy the patient was able to walk about freely without pain. Prolonged narcosis was given from April 30 to May 15, but no lasting improvement resulted. Psychotherapy and occupational therapy were continued until December. An electrical convulsion was given, from which the patient made a fair recovery. He died twelve hours later. The diagnosis of cerebral fat embolism was established by the microscopic evidence and was clinically suggested by the so-called free interval, although it was not entirely free of symptoms and there is some doubt whether it ended with the first collapse about twenty minutes after the convulsion or with the second final collapse about two hours later. The characteristic petechial hemorrhages of the skin were absent; in the brain only a few were encountered. Cerebral fat embolism has not been described after electrical convulsion treatment. Neither a fracture nor any of the other recognized causes of fat embolism were found post mortem.

2:109-144 (July 28) 1945

- Scrub Typhus as War Disease. J. W. D. Megaw.—p. 109.
Scrub Typhus: Clinical Study. M. C. Menon and C. Ibbotson.—p. 112.
Effects of Mechanical Stresses on Man. B. H. C. Matthews.—p. 114.
*Peripheral Arterial Embolectomy. P. Hopkins.—p. 117.
High Color Index Anemia Due to Vitamin C Deficiency. B. Gottlieb.—p. 119.
Tropical Dietery. W. E. McCulloch.—p. 127.

Peripheral Arterial Embolectomy.—The leading symptom in the diagnosis of peripheral embolism is that something sudden happens in a limb. It may feel "cold and numb," "as heavy as lead," "as though it was gripped in a vice." Together with any of these there is often loss of voluntary movement. The limb is cold from 1 to 2 inches below the site of lodgment of the embolus. Pallor or cyanosis may be evident, and there may be mottling or lividity below a line of demarcation. Arterial pulsation is absent distally, while pressure over the site of the embolus causes pain. As soon as peripheral embolism is diagnosed the limb should be lowered not raised and surrounded by ice bags, not hot water bottles, as the metabolism of the anoxic tissues must be reduced. Ideally, operative removal of the embolus should be carried out within four to six hours, but delay over this time need not preclude the possibility of recovery after embolectomy. Hopkins performed successful popliteal and femoral embolectomies on a woman aged 43 thirty-nine hours after lodgment of the emboli. The convalescence was uneventful.

Journal of Endocrinology, London

4:219-370 (July) 1945

- Preparation and Biologic Effects of Iodinated Proteins: 1. Introduction. J. Barcroft.—p. 219.
Id.: 2. Preparation and Properties of Physiologically Active Iodinated Proteins. Rosalind P. Rivers and S. S. Randall.—p. 221.
Id.: 3. Effect on Iodinated Protein Feeding on Lactating Cow. K. L. Blaxter.—p. 237.
Id.: 5. Effect on Basal Metabolism of Milk from Cows Fed with Iodinated Protein. J. D. Robertson.—p. 300.
Id.: 6. Further Experiments on Restoration and Maintenance of Growth After Thyroidectomy. I. W. Rowlands.—p. 305.
Id.: 7. Use of Rana Temporaria Tadpoles for Assay of Thyroidal Activity. R. Deanesly, J. Emmett and A. S. Parkes.—p. 312.
Id.: 8. Use of Xenopus Tadpoles for Assay of Thyroidal Activity. R. Deanesly and A. S. Parkes.—p. 324.
Id.: 9. Biologic Activity of Iodinated Proteins. R. Deanesly and A. S. Parkes.—p. 356.

Journal of Laryngology and Otology, London

59:437-486 (Dec.) 1944

Survey of Aural Health of Aircrew Candidates for Service with Royal Air Force. E. D. D. Dickson and G. H. Bateman.—p. 437.
Blast Injuries of Ear. D. H. Craig.—p. 443.

Lancet, London

2:33-64 (July 14) 1945

Familial Crises in Congenital Hemolytic Disease. J. L. Horne, H. Lederer, H. J. R. Kirkpatrick and D. G. Leys.—p. 33.
Purulent Meningitis: Use of Hypertonic Solutions in Treatment. E. S. Shalom.—p. 36.
Treatment of Tropical Ulcer. P. N. Walker-Taylor.—p. 40.
Clinical Trial of UFI: New Compound of Urea and Iodine. C. P. G. Wakeley.—p. 42.
Wounds Inflicted by Antipersonnel Mines. C. D. P. Jones.—p. 44.
Pleuropneumonia-like Organisms in Human Vagina. Emmy Klieneberger-Nobel.—p. 46.

2:65-96 (July 21) 1945

Diagnosis of Cancer in National Medical Service. G. F. Stebbling.—p. 65.
Chronic Amebic Dysentery: New Approach to Treatment. W. H. Hargreaves.—p. 68.
Rupture of Spleen in Infectious Mononucleosis. J. S. Davis, W. MacFie, M. Wright and R. Allyn.—p. 72.
Curare as Aid to Anesthetist. H. R. Griffith.—p. 74.
Wounds in Anesthesia. F. B. Mallinson.—p. 75.
Sympathetic Block in Vascular Injuries: Review. A. H. M. Siddons.—p. 77.

Chronic Amebic Dysentery.—A man who had been invalided from India, where he had been in the hospital almost continuously for a year because of chronic amebic dysentery and whose condition deteriorated in spite of two courses of standard treatment in another hospital at home, was cachectic and pyrexial, with persistent abdominal pain and some twenty foul stools daily containing blood and many amebas. In spite of six daily injections of 1 grain (0.06 Gm.) of emetine followed by a twenty-one day blunderbuss course, his condition became worse and he appeared moribund. At this state Hargreaves administered an initial dose of 100,000 units of penicillin intramuscularly followed by 33,000 units every three hours up to a total of just over 1 million units. The result was dramatic. Twenty-four hours after the treatment was begun he was free from pain and was afebrile. After two days he passed a formed stool for the first time in two years. He rapidly put on weight, but amebas were still present in the stools and after two weeks there was a recurrence of diarrhea with blood. He was given a second course of penicillin, this time $2\frac{1}{4}$ million units. Again his stools became normally formed and sigmoidoscopy revealed that the bowel was healthy. After a month's convalescence he was given another twenty-one day course of blunderbuss antiamebic treatment, as amebas were still present in the stools. Four months later six daily examinations of the stools were negative. To combat some of the organisms which are not sensitive to penicillin, the author also gives a course of succinylsulfathiazole concurrently by mouth—total 80 Gm. The author has treated 47 cases of severe refractory amebic dysentery on these lines and has rarely found more than one course of emetine bismuth iodide to be necessary afterward to cure the amebic infection. Success with penicillin and succinylsulfathiazole in chronic amebiasis led to the application of this treatment in chronic ulcerative colitis. It has been successful in several such cases.

Curare as Aid to Anesthetist.—Griffith's practice has been to administer curare only when there is need to obtain increased muscular relaxation. This may be done at any time during the operation and should be in adequate dosage (60 to 100 mg. for an adult under cyclopropane), which may be repeated but is by no means necessary in every abdominal case. A recent survey at the author's hospital in Montreal shows that, although curare is used on the slightest provocation and has been used more than five hundred times, it is still administered in only 38 per cent of abdominal operations. Curare should not be the excuse for a poor anesthetic sloppily administered. He has used cyclopropane for many years to the almost complete exclusion of ether. For this reason most of his work with curare has been on patients under cyclopropane anesthesia. The two drugs seem to make an ideal combination. Curare may also be used in ether anesthesia or when ether is combined with cyclo-

propane, ethylene or nitrous oxide; but under these circumstances the dose of curare should be greatly reduced—to an average of 20 to 40 mg. for an adult. Perhaps the most surprising outcome of the investigation on curare is the absence of evidence of toxicity in a drug with such a fabulous reputation as a poison. However, earlier physiologists worked with a comparatively crude curare which probably contained variable quantities of other adulterating substances. The new purified and pharmacologically standardized product is rapidly broken down in the human body and is completely eliminated. When improperly used, curare is still a poison capable of producing death by respiratory paralysis. Griffith feels that curare will make it possible to use the nontoxic and controllable gas anesthetic agents, particularly cyclopropane and ethylene, in a wider variety of major operations, that it will reduce the use of spinal anesthesia for upper abdominal surgery with its attendant hazards and that it will afford more efficient anesthesia with low concentrations of ether when that agent is chosen.

Medical Journal of Australia, Sydney

1:577-600 (June 9) 1945

Rehabilitation as Seen in Royal Australian Air Force: Some Therapeutic and Occupational Aspects. G. Andrew.—p. 577.
Allergen of House Dust. C. Sutherland.—p. 583.

1:601-624 (June 16) 1945

*Rh Factor and Blood Group Frequencies in Japanese. J. J. Graydon and R. T. Simmons in collaboration with G. A. M. Heydon and A. J. Bearup.—p. 601.
Adelaide Local Board of Health Survey of School Children by Mantoux and Patch Test. H. K. Fry.—p. 604.
Gestation Period. D. H. Sutton.—p. 611.

Rh Factor and Blood Group Frequencies in Japanese.

—Graydon and his collaborators collected blood group data in relation to anthropology for different races in the Pacific. They report observations on blood samples obtained from 400 adult male Japanese. The samples were tested for blood groups and subgroups, M, N types and the Rh factor. It was found that 123 (30.75 per cent) belonged to group O, 149 (37.25 per cent) to group A, 88 (22 per cent) to group B and 40 (10 per cent) to group AB. Only 2 (1.1 per cent) of 189 samples of blood of groups A and AB were of subgroup A_2 . The Japanese in this respect are similar to the Australian aborigines, Hawaiians, American Indians, Eskimos, Chinese and Indonesians in that the factor A_2 is absent or extremely rare. One hundred and fourteen (28.5 per cent) of the samples were of type M, 204 (51 per cent) were of type MN and 82 (20.5 per cent) were of type N. Three hundred and ninety-nine (99.75 per cent) of the samples were Rh positive; only 1 sample was found to be Rh negative. In respect to the Rh factor the Japanese again give a result similar to the Australian aborigines, American Indians, Chinese and Indonesians, the blood of all of which races is approximately 100 per cent Rh positive. In the white races tested only 85 per cent approximately have Rh positive blood.

1:625-648 (June 23) 1945

Pathologic Lesions in 5,000 Australian Autopsies. J. B. Cleland.—p. 625.
Survey of Scrub Typhus (K Typhus) in New Guinea. J. de Vidas.—p. 631.
*Prophylactic Use of Sulfanilamide in Rheumatic Fever: Preliminary Report. S. G. Anderson.—p. 635.
Injuries Produced by Plants in Tropical Queensland. H. Flecker.—p. 636.

Prophylactic Use of Sulfanilamide in Rheumatic Fever.

—Anderson reports that in August 1944 he established at the Children's Hospital in Melbourne, as a branch of the rheumatic heart clinic, a section which has been concerned with the distribution of sulfanilamide and the supervision of patients suffering from rheumatic fever who were taking the drug. The patients who were selected for prophylactic treatment with sulfanilamide had all suffered an attack of rheumatic fever one or more times during the preceding five years, usually during the previous two years. Such patients varied in age from 3 to 14 years. Of 104 children who received sulfanilamide prophylactically and who were observed for six months, 1 child had a doubtful recurrence of the disease. An average of 470 children not taking the drug formed a control series during the same

time, of whom 30 definitely suffered from recurrent rheumatic fever, and 3 possibly so; this is equivalent to a recurrence rate of 13.5 to 15 per cent per year. The toxic effects of the drug were minimal.

Presse Médicale, Paris

53:197-216 (April 21) 1945

- Paradoxical Difference Existing Between Obliterating Endoaneurysmography and Resection of Sac in Aneurysms. R. Leriche.—p. 197.
Osteochondritis Dissecans with Abnormal Evolution: Resorption of Detached Osteocartilaginous Fragment. A. Mouchet.—p. 198.
Parotid Adenitis of Dental Origin. M. Dechaume.—p. 199.
*Electrophysiologic Studies on Metrazol Epilepsy: Convulsive Coma-therapy. P. Chauchard, Henriette Mazoué and R. Lecoq.—p. 201.

Metrazol Epilepsy.—Chauchard and his associates found, in experiments on rabbits, guinea pigs and rats, that metrazol injections result in an inverse modification of the excitation time on the cerebral cortex (prolongation) and the peripheral nerves (shortening). The effects of metrazol on the nervous centers are complex. The investigations conducted by the authors confirm earlier observations which attribute to the base of the brain an important part of the metrazol attack, but they go further and bring proof that the cerebral cortex, far from being stimulated by metrazol, is depressed by it. This is in accord with the fact that in man the attack is accompanied by loss of consciousness, that is, by suppression of the cortical function. In the encephalogram, under the effect of metrazol, the augmentation of voltage is on a par with a retardation of the waves which speak in favor of a depression. The authors show that the complex action of metrazol, depressing the superior centers and stimulating the inferior ones, must not be confounded with that of ordinary stimulants such as strychnine, which excites the brain and the lower centers simultaneously. Great similarity exists between metrazol epilepsy, insulin coma and electric shock, which are used in psychiatry.

Anais Brasileiros de Ginecologia, Rio de Janeiro

10:129-196 (Feb.) 1945. Partial Index

- *Perforating Endometriosis of Posterior Fornix. N. Arenas and O. Blanchard.—p. 129.
Testosterone Propionate in Pain from Cancer of Uterus. J. Nemirovsky.—p. 136.

Perforating Endometriosis of Posterior Fornix.—According to Arenas and Blanchard, endometriosis of the posterior fornix may be caused by any of the following conditions: (1) endocervicitis, (2) reflux of menstrual blood, (3) rupture of an ovarian cyst, (4) implantation of decidual cells after obstetric trauma and (5) proliferation of aberrant endometrial tissue. The condition is observed, as a rule, in women between 30 and 40 years of age. The symptoms are more or less acute. There is a hypermenorrhea, intermenstrual or premenstrual bleeding, rectal pain and small rectal hemorrhages. Small, dark blue cysts and bleeding granulations partially covered by the vaginal folds are seen during the gynecologic examination. The appearance of the vaginal lesion is that of a scar. There is an early infiltration of the rectovaginal septum and later stricture of the rectum. The diagnosis is arrived at by a biopsy. The therapy consists in irradiation of the ovaries or a panhysterectomy. In the case reported by the authors, endometriosis of the posterior fornix perforated the cul-de-sac of Douglas and infiltrated the rectovaginal septum. Treatment consisted in a bilateral adnexectomy.

Brasil-Médico, Rio de Janeiro

59:89-106 (March 17, 24 and 31) 1945. Partial Index

- *Penicillin in Tertiary Yaws. F. Nery Guimarães.—p. 89.
Cancer in Children. B. Ruy Prates.—p. 98.

Penicillin in Yaws.—Nery Guimarães reports good results with penicillin treatment of 6 patients with tertiary yaws (ulcerated gumma, periostitis, osteitis, osteoporosis and rhinopharyngitis mutilans). The Wassermann reaction was strongly positive in all. The drug was administered intramuscularly in doses of 400 Oxford units each, which was given every six hours three times a day up to a total dose which varied between 50,000 and 600,000 Oxford units during a period which varied between three weeks and seven months. Clinical recovery was

obtained in all cases. The Wassermann test repeatedly performed became negative and remained so. In cases of bone lesions, pain on pressure of the involved bone area disappeared, but the structure of the bone, as seen under the x-rays, was not entirely reconstituted. The results of penicillin in cases of bone lesions were as good as those in which arsphenamine therapy was employed. The patients are still under observation. This is a preliminary report.

Prensa Médica Argentina, Buenos Aires

32:1093-1123 (June 15) 1945. Partial Index

- *Bronchial Carcinoma with Early Multiple Cutaneous Metastasis. F. Morán Miranda and C. G. Gonnella.—p. 1099.

Bronchial Carcinoma.—According to Morán Miranda and Gonnella, early cutaneous metastasis of primary bronchial carcinoma is rare. The metastatic nodules are multiple. They appear simultaneously with the respiratory symptoms and resemble sebaceous cysts, fibromas or gummas. Later they may become ulcerated and simulate anthrax. The diagnosis is made by biopsy. The subject of the authors' report was a man aged 37 who one month after recovery from pneumonia developed a chronic bronchitis, changes in the voice and multiple cutaneous nodules over the chest wall. Rapid emaciation, new cutaneous nodules and softening of the early ones followed. The sputum was purulent, hemorrhagic and negative for tubercle bacilli. The patient had no syphilis. Diagnosis of bronchial cancer was confirmed by bronchoscopy, the appearance of left recurrent laryngeal paralysis and of left phrenic paralysis, biopsy of the metastatic nodules and the rapid, fatal course of the disease. Symptoms of peritoneal and intra-abdominal metastasis appeared three weeks before death. The diagnosis was confirmed by a necropsy, which showed generalized cancer of the left lung and mediastinum and a large number of cutaneous and visceral metastases.

Acta Orthopaedica Scandinavica, Copenhagen

15:59-248 (Nos. 2 to 4) 1944

- Partition of Sesamoid Bones of Lower Extremities. H. Sundt.—p. 59.
Experimental Investigations into Postfetal Osteogenesis. A. Bertelsen.—p. 139.
Hereditary Multiple Epiphyseal Disturbances (Chondro-Osteo-Dystrophica Brailsford). I. Hermodsson.—p. 182.
*Habitual Dislocation of Shoulder: Study on Nature and Treatment of the Disease, Including Remarks on Traumatic Dislocation. E. Thomsen.—p. 206.

Habitual Dislocation of Shoulder.—Thomsen says that the shoulder and the jaw have a lax joint capsule and are the joints most frequently subject to dislocation. Shoulder dislocations constitute about 50 per cent of all dislocations. It has been stated that 5 per cent of all primary dislocations are likely to become habitual. In about 12 per cent of the cases habitual dislocation is bilateral, but mostly it occurs in the right shoulder (about 66 per cent) and like traumatic dislocation it is most frequent in males. Habitual shoulder dislocation is caused by congenital predisposition but may be provoked by a trauma. The first dislocation in the habitual cases occurs relatively early in life. Statistics indicate that in nearly half of the cases it occurs before the age of 20 and in 90 per cent before the age of 30. In 75 per cent of the cases the recurrences appear before the end of the first year. Gradually the recurrences become more frequent, requiring an ever slighter cause. In between the recurrences there may be subluxations accompanied by pain. The disease may be treated without operation with a bandage holding the arm tied to the body. About seventy operative methods have been reported. The three main types in use are suspension operations, operations on the coracoid process and the Hybbinette-Eden operation. Capsular plication is no longer applied as an independent operation but as a supplement to the two types last mentioned. Thomsen reviews these operative methods on the basis of published reports and his own material of 21 patients treated at the Copenhagen Orthopedic Hospital and the Bispebjerg Hospital and concludes that the Hybbinette-Eden is the most effective method. He favors the Magnus modification of the Hybbinette-Eden method, in which a bone graft is inserted outside the synovial membrane.

Book Notices

Textbook of Abnormal Psychology. By Roy M. Dorcus, Associate Professor of Psychology, University of California at Los Angeles, and G. Wilson Shaffer, Dean of the College of Arts and Sciences, Johns Hopkins University, Baltimore. Third edition. Cloth. Price, \$4. Pp. 547, with 5 illustrations. Baltimore: Williams & Wilkins, 1945.

This is an improved edition of a remarkably good textbook on abnormal psychology. Such books are usually written for college (nonmedical) students, and most of them, though accurate, are insufficiently detailed to give the undergraduate college student a good idea of the behavior of persons who are suffering from a mental disease or who are having abnormal mental experiences. One must perforce think of academic psychology, including the psychology of the abnormal, as bearing the same relationship to psychiatry that college physiology and hygiene bear to general medicine. A knowledge of these basic sciences is useful to the layman in enabling him to comprehend what is going on when mental or physical ailments occur in persons whose health has some bearing on his own adjustment to life. In view of this, basic books on either abnormal psychology or hygiene must be sufficiently complete to serve their purpose yet must stop short of giving the impression to the student that he can practice psychiatry or medicine of even the simplest sort. In the case of abnormal psychology, the material to be discussed is bound to overlap that included in textbooks on psychiatry, yet Dorcus and Shaffer in the present textbook have drawn a very clearcut line. While the researches of the medical profession have by no means been ignored, much space is devoted to experimental studies and investigation from the psychologic laboratory and clinic. There is a discussion of basic nonmedical psychology, but a large part of the book is devoted to the description of mental diseases of various sorts and to a general discussion of their treatment. The chapters on treatment are extremely good and emphasize the fact that no psychologist should attempt to give treatment without the supervision of a psychiatrist. There is an extensive bibliography of over eight hundred items which is coordinated with the text. There are some case histories cited as well as a number of worthwhile footnotes. Dorcus and Shaffer have produced an informative, accurate and sensible work, yet it does not transgress fields where the medical man should be the practitioner. It can be highly recommended to graduate students of psychology and to premedical and medical students, and even psychiatrists might find in it items of considerable interest to round out their knowledge of the human mind.

The Story of a Country Medical College: A History of the Clinical School of Medicine and the Vermont Medical College, Woodstock, Vermont, 1827-1856. By Frederick Clayton Walte. Cloth. Price, \$4.50. Pp. 213, with illustrations. Montpelier, Vermont: Vermont Historical Society, 1945.

This interesting and scholarly account of a medical school operating in the small community of Woodstock, Vermont (1827-1856), was written in the belief that "history is more than a mere recital of annals." The book tells the story, not only of a medical school, but of the medical education of the times, an end too seldom achieved in histories of medical schools. In the early nineteenth century about one third of the schools were "country schools," and about one third of the practitioners were graduates of these institutions. At the time, medical education in this country was in its childhood, a few years past the infancy of medical preparation limited to apprentice training. A three year "curriculum" was usual, in which the student attended two sessions (totaling twenty-four weeks) of medical lectures and devoted the remainder of the three calendar years to work with a physician preceptor. There were no graded courses, so that the second didactic session was a repetition of the first, unless the student chose to attend another school, which was common. Laboratory work, hospital experience and full time instructors were virtually nonexistent. Salaries consisted of a division of the balance remaining in the treasury at the close of the year. Dissection was elective, and cadavers were provided by "resurrectionists." The personalities involved, the operation of the school and its place in medical history are set forth in a manner to hold the attention of any one interested in medical education and medical history.

Rypins' Medical Licensure Examinations: Topical Summaries, Questions, and Answers. Fifth edition, revised under the editorial direction of Walter L. Bierring, M.D., F.A.C.P., M.R.C.P., Secretary, Federation of State Medical Boards of the United States, Des Moines, Iowa. With the Collaboration of a Review Panel. Cloth. Price, \$6. Pp. 546. Philadelphia, London & Montreal: J. B. Lippincott Company, 1945.

This book, which is now in its fifth edition, has apparently two major objectives in view. The first is to help dispel the fear with which the average medical graduate approaches the ordeal of the examination for medical licensure, while the second is to aid the candidate in his selection, organization and coordination of medical knowledge already acquired. To carry out this purpose the editorial panel has selected such material as has generally been utilized by the various examining boards. This includes the major subjects of anatomy, physiology, chemistry, bacteriology, pathology, hygiene and preventive medicine, obstetrics and gynecology, medicine, surgery and the addition of a new section on pharmacology. The descriptive material is presented in concise summary form followed at the end of each chapter by typical questions based on a careful analysis of the licensing examinations throughout the United States.

The question and answer form has been abandoned, although the title would seem to imply that this method of presentation is still in use.

The book recognizes that the testing of academic knowledge can best be left in the hands of the medical schools. Accordingly it advocates that licensing boards should limit themselves mainly to the examination of the candidate's ability to apply medical knowledge in clinical practice. This policy does not yet predominate, however, for a great many of the questions used are still academic in nature, requiring little more than the routine memorization of factual data.

There is an excellent discussion on the philosophy of examinations and their importance as an integral part of the program of education and as a measure of knowledge and achievement. Medical students and applicants for licensure will find this volume a convenient, well organized source of reference and a stimulus to further study and review.

Annals of the University of Otago Medical School 1875-1939. By D. W. Carmalt Jones. Cloth. Pp. 286, with 12 illustrations. Wellington, New Zealand: A. H. and A. W. Reed. 1945.

The title "annals" is appropriately selected for this book since it is essentially a compilation of material which might be assembled primarily from annual reports and university catalogues. The author frankly realizes that "the book would have very small appeal outside New Zealand." The University of Otago Medical School is named for the province in which it is located on South Island, one of the two major islands constituting New Zealand. There is a brief account of the country itself and of early medicine on the islands before the establishment of the school in 1875. Most of the book deals with the courageous struggle for faculty, funds and facilities which has characterized the final consummation of an acceptable program of medical education of many medical schools. This task was doubly difficult at Otago, where "it must have been quite exceptional half a century ago for an embryo school, ten thousand miles from England, to secure men of . . . [high] . . . professional standing . . ." for the faculty. Unfortunately, there is little mention of the relationship of medical education to the form of practice in this country, perhaps because the "annals" terminate with the year 1939. It was in 1940 that the Social Security Act was passed, introducing "great changes in the medical practice in the country."

The Outlook for Women in Occupations in the Medical Services: Women Physicians. United States Department of Labor, Women's Bureau, Bulletin 202, Number 7. Paper. Price, 10 cents. Pp. 28, with illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1945.

This pamphlet is an objective compilation of information on the opportunities for women in medicine. The source materials are authoritative. The booklet will be useful to women considering studying medicine and desiring to know the problems they will encounter in so doing.

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TRANSCRANIAL REMOVAL OF INTRA- ORBITAL TUMORS

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The diagnosis of orbital tumors is at times very difficult and the decision as to the best surgical approach to tumors situated within the orbit is often even more difficult. When there is no question of intracranial extension, tumors in the anterior portion of the orbit can be treated quite satisfactorily by the ophthalmic surgeon through an anterior orbital approach. However, since many posterior orbital tumors have an intracranial component, as pointed out by Dandy¹ in his monograph, since the prime purpose of the surgical treatment of intraorbital tumors is to conserve vision and to have as nearly normal function of the eye as possible, and since the transcranial approach to such tumors through the roof of the orbit gives maximal exposure and direct visualization of the structures within the posterior part of the orbit and permits at the same time the removal of any intracranial extension of the tumor, the neurosurgeon should be responsible for the surgical treatment of such retrobulbar orbital tumors. Nevertheless, cooperation between the ophthalmologist and the neurosurgeon can provide the patient the maximal benefit from treatment. It should require little emphasis that the ophthalmologist must bear the greater part of the burden in determining the treatment in these cases, for he is most likely to see the patient first because of proptosis or visual disturbance, symptoms referable to the eye. There are, of course, diseases other than intraorbital tumors which produce proptosis and visual disturbance, and they must be excluded. Sometimes a period of observation is necessary before the nature of the lesion can be determined. If proptosis increases or vision fails, neurosurgical consultation should be had to attempt to arrive at a diagnosis, since there are many intracranial lesions which produce proptosis and visual loss, even unilaterally.²

Of the surgical approaches to the orbit, the most direct is through the outlet, the anterior opening. The eyelids, the septum orbitale and the eyeball fill the outlet and limit the space for operation under direct

vision within the orbit to the anterior third. A tumor situated in the posterior portion of the orbit,³ such as an encapsulated hemangioma, may be exposed to view by an opening made along the superior orbital rim and exposing the roof of the orbit, but the dissection of such a tumor must be done by touch, as it is practically impossible to retract the tissues sufficiently for a full view of the tumor and its attachments.

Tumors situated in the anterior third of the orbit should be removed by the most direct route or by a route that will cause the least trauma and result in the least loss of function of the eye and eyelids and the least disfigurement. Anatomic conditions determine that course. To reach a tumor in the lacrimal fossa, for example, the surgeon may use the frontal approach either through the upper conjunctival cul-de-sac or through the upper lid beneath the brow to the bony rim of the orbit. The former route calls for a wide canthotomy and bares the cornea to exposure and trauma during the operation. The latter route does not sever any important structure and permits more room for manipulation than the approach through the cul-de-sac. Only the anterior approach need be considered for removal of tumors that are confined to the anterior portion of the orbit, including osteomas, which, as we know, arise outside the orbit within the sinuses and extend into the orbit by a small pedicle.

Another route to the orbital contents is by way of a resection of the lateral wall of the orbit, Krönlein's operation. This has never been a much used operation because the working space obtained by reflecting the bony flap is always disappointing. Even though the bony portion of the reflected wall is entirely removed temporarily, as it may be, little or no more working space is obtained than by the approach through the brow incision.

Krönlein's operation is useful in removal of tumors of the optic nerve without enucleation of the eyeball or in removal of encapsulated tumors situated near the apex of the orbit. For removal of tumors in this region a transcranial approach is usually to be preferred. The choice of approach must, however, at times be determined by a factor other than that of accessibility. If further decompression of the orbit is desired, it is hardly possible to get the required bone resection by Krönlein's method, whereas by the transcranial approach not only can the entire roof of the orbit and the optic canal be removed but the lateral wall can also be resected as far as necessary.

For removal of tumors that are definitely confined to the orbit, even in the posterior third, the frontal or

From the Section on Neurologic Surgery (Dr. Love) and the Section on Ophthalmology (Dr. Benedict), Mayo Clinic.

1. Dandy, W. E.: *Orbital Tumors: Results Following the Transcranial Operative Attack*, New York, Oskar Pfister, 1941.

2. Voss, H. C., and Adson, A. W.: *Meningiomas of the Sphenoidal Ridge with Unilateral Exophthalmos: Report of 2 Cases*, S. Clin. North America 14: 663-672 (June) 1934.

3. Benedict, W. L.: *Removal of Orbital Tumors*, Surg., Gynec. & Obst. 58: 383-389 (Feb. 15) 1934.

the Kronlein operation may be entirely adequate, as has been proved many times. However, one seldom can be certain that a tumor known to be in the apical portion of the orbit does not extend beyond the orbital walls, or where its origin may be.

Meningioma is the most frequent of orbital tumors that involve the wall of the orbit and the cranial cavity. Meningioma, or endothelioma, is found in persons of all ages and is particularly malignant in children. It is also probably the most frequent of all tumors found in the posterior portion of the orbit in children less than 15 years of age. Such tumors cannot be removed by either the anterior route or Krönlein's operation but only by the transcranial method.

The transcranial approach, permitting resection of the optic nerve to the chiasm, is the operation of choice in enucleation of eyes for retinoblastoma. While other foci may be present in the central nervous system to account for multiple gliomas, and while metastasis may be present before the retinoblastoma has been detected, the complete removal of the nerve is desirable because

the method best designed to meet the demands of the situation. The transcranial method was employed in 35 cases between Nov. 6, 1933 and Nov. 14, 1944.

SURGICAL TECHNIC

The approach to tumors within the posterior portion of the orbit that are to be removed transcranially is the same as that used by neurosurgeons for the transcranial removal of tumors involving the pituitary gland. Many surgeons vary a little in their technic of elevating a frontal flap, but essentially the steps are as follows:

Through an incision curved upward and forward from in front of the external ear the scalp is dissected free from the underlying temporal fascia and turned forward. The temporal fascia, temporal muscle and pericranium are incised around the margins of the proposed bone flap except at the base in the temporal area where these structures serve as a hinge on which to bend the bone flap downward. The bone flap is then elevated after making multiple burr holes and connecting them

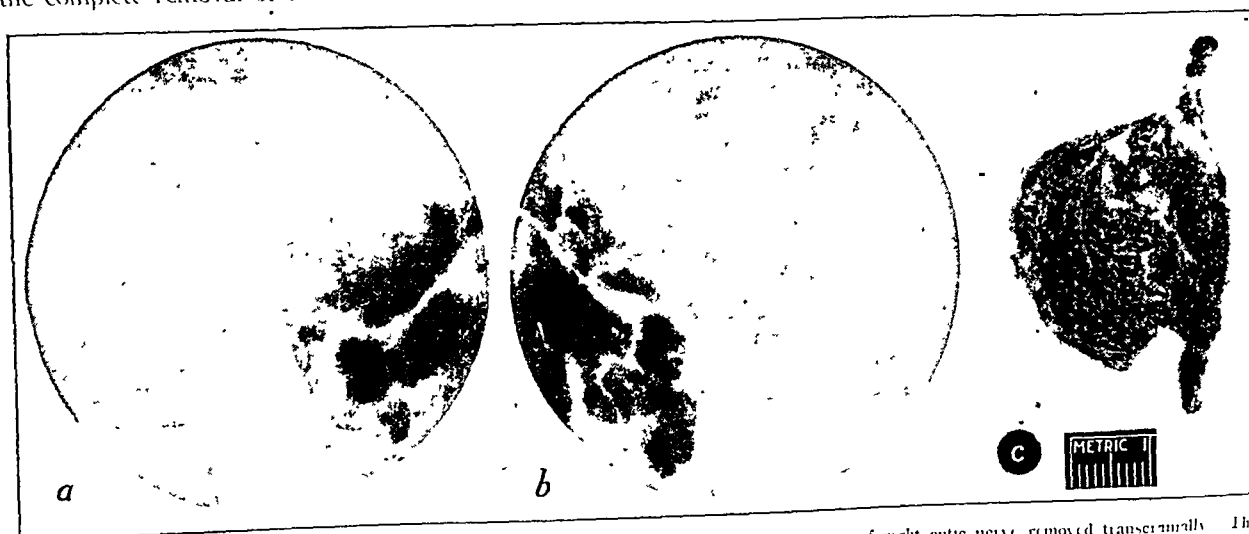


Fig. 1. (Case 27)—a, normal left optic foramen, b, enlarged right optic foramen, c, astrocytoma of right optic nerve removed transcranially. The excision was due to intracranial extension of the tumor.

the tumor is known to spread by direct extension along the optic nerve to invade the brain.

It is difficult to argue that removal of all of the optic nerve rather than merely the intraorbital portion will save more lives. There is some reason for the belief that the tumor extends slowly along the nerve, and there is the possibility that it may be interrupted in the canalicular portion.

As long as there is uncertainty regarding the extent of a tumor in the posterior portion of the orbit, most tumors so situated should be removed by the transcranial route. Recently the transcranial method of approach to the orbit has been made quite safe, and as more surgeons are trained in the necessary technic of head surgery than are ophthalmologists in orbital surgery the better results obtained by the transcranial operations of neurosurgeons become apparent.

Figures taken from the records of the Mayo Clinic show that in the years 1907 to 1944 inclusive there were 2,985 patients who had tumors of the eye or the adnexa or both, of whom 738 (24.7 per cent) had tumors of the orbit. More than thirty-one different kinds of tumors were encountered. Many were primary tumors of the eye and orbit in various stages of development. Operation was performed on a total of 395 by

with a Gigli saw. The dura mater is stripped from the floor of the anterior cranial fossa (which is for all practical purposes the roof of the orbit), and the frontal lobe of the brain, protected by the dura mater, is gently retracted upward and toward the opposite side of the cranium. With the patient receiving drop ether over the end of a Magill intratracheal tube, this is not difficult. The orbital plate is then perforated and removed with rongeurs. It is unnecessary to incise the dura mater if the tumor is entirely intraorbital; if, however, the tumor extends through the optic foramen or the superior orbital fissure, then it is a simple matter to incise the dura mater along the sphenoid ridge in order to expose the entire tumor and effect a complete removal. If the necessity for incising the dura mater is not present, it is better to leave it intact as a protection for the frontal lobe of the brain and as a barrier against bleeding and possible infection. Blood in the subarachnoid spaces will produce meningism and cause the patient distress and the surgeon, sometimes, unnecessary concern.⁵ At times in effecting the complete removal of an intraorbital tumor the ethmoid air cells

⁴ Some few surgeons still use the transphenoid approach.
⁵ Hamme, E. M., Jr.: Reaction of the Meninges to Blood, *Arch Neurol & Psychiat.* 52:595-514 (Dec.) 1944.

may be opened and thus the danger of infection is a real one. In 1 of our cases there was gross pus within the orbital tumor. Yet, in spite of this, we have not lost a single patient from infection.

We have not encountered bilateral orbital tumors which have required transcranial removal. We have had several cases of glioma of the optic chiasm with

the supraorbital ridges. The portion of frontal bone thus exposed is removed and kept wrapped in a sterile towel wet with saline solution until it is to be replaced at the end of the operation. The dura mater is stripped from the crista galli and cribriform plate of the ethmoid and from the orbital roofs, thus giving exposure of the entire anterior cranial fossa.

Intraorbital Tumors Removed Transcranially

Case	Age, Years	Sex	Chief Complaint	Duration	Röntgenogram	Pathologic Condition	Extent of Lesion	Result of Operation
1	12	♀	Protrusion O S	5 yrs	Positive	Hemangioma endothelioma	Orbit	Recovered *
2	31	♀	Headaches falling vision O S	1½ yrs 6 mos	Positive	Neurofibroma	Orbit	Recovered
3	50	♀	Prominent O D	9 mos	Positive	Meningioma	Orbit	Recovered *
4	43	♀	Falling vision O S	14 mos	Negative	Meningioma	Orbit	Recovered
5	27	♂	Falling vision O S Blindness O S	4 wks 10 days	Negative	Aneurysm	Orbit	Recovered
6	4	♀	Unequal pupils Protrusion O S	2 yrs 5 mos	Positive	Cavernous hemangioma	Orbit	Recovered
7	10	♂	Prominent O S	2½ yrs	Positive	Optic nerve astrocytoma	Orbit	Recovered
8	13	♂	Prominent O S	5 mos	Positive	Osteoma	Orbit	Recovered
9	1	♀	Prominent O D	6 yrs	Positive	Meningioma	Orbit and cranium	Recovered
10	48	♀	Loss of vision O D	2 yrs	Negative	Meningioma	Orbit and cranium	Recovered *
11	23	♀	Prominent O S	2½ mos	Positive	Hemangioma	Orbit	Recovered *
12	30	♀	Painful and prominent O D	6 mos	Positive	Epidermoid	Orbit and cranium	Recovered
13	37	♀	Prominent and painful O D	1½ yrs	Positive	Granuloma	Orbit and extradural	Recovered
14	13	♀	Prominent O D	3 yrs	Positive	Angioma	Orbit	Recovered
15	20	♂	Prominent O S	1 yr	Positive	Epidermoid	Orbit and cranial bone	Recovered
16	41	♀	Falling vision	5 yrs	Negative	Meningioma	Optic canal	Recovered
17	0	♂	Nasal obstruction	2 yrs	Positive	Meningioma	Orbit, frontal sinus and nose	Recovered
18	51	♂	Prominent O D	4 yrs	Positive	Organized blood clot	Orbit and frontal bone	Recovered
19	44	♀	Bulging O D	1 yr	Positive	Osteoma	Orbital plate	Recovered
20	31	♀	Falling vision O S Prominent O S	5 yrs 3 yrs	Positive	Angioma	Orbit	Recovered
21	3	♂	Prominent O S	3 wks	Negative	Astrocytoma optic nerve	Orbit and cranium	Recovered
22	22	♀	Tumor behind O S	2 1/2 mos	Positive	Angioma	Orbit	Recovered
23	13	♂	Prominent O D	2½ yrs	Positive	Osteitis fibrosa	Orbit	Recovered
24	49	♀	Falling vision O U	2½ yrs	Negative	Angioma	Orbit (right)	Recovered
25	23	♀	Loss of vision O D Prominent O D	2 yrs 1 yr	Positive	Astrocytoma optic nerve	Orbit and cranium	Recovered
26	36	♀	Blindness O D	3 yrs	Positive	Osteitis fibrosa	Orbit	Recovered
27	13	♂	Prominent O D	1½ yrs	Positive	Astrocytoma optic nerve	Orbit and cranium	Recovered
28	51	♀	Diplopia Prominent O S	13 yrs 13 yrs	Positive	Meningioma	Orbit	Recovered
29	5	♂	Double vision Loss of vision O D	2 mos	Negative	Meningioma	Orbit and cranium	Recovered
30	13	♂	Deformity of face	10 mos	Positive	Neurofibroma	Orbit and cranium	Died 23 days after operation, hyperthermia and increased intracranial pressure
31	2	♀	Prominent O D	3 mos	Negative	Astrocytoma optic nerve	Orbit	Recovered
32	29	♂	Proptosis O S Headaches	9 yrs 9 yrs	Positive	Osteitis orbit plate	Orbit	Recovered
33	< mos	♂	Prominent O D	since birth	Positive	Fibrosarcoma	Orbit	Recovered
34		♀	Falling vision and blindness O S	1½ yrs	Positive	Meningioma	Orbit and cranium	Recovered
35	48	♀	Diplopia falling vision O S	5 yrs 3 yrs	Positive	Meningioma	Optic canal	Recovered

* Previously reported.

extension of the lesion along both optic nerves into the orbits, but because of the fact that removal of such a tumor would result in total immediate and permanent blindness we have been reluctant to remove such tumors. Possibly this is a mistake, but the results of conservative treatment seem to justify our present methods.

Bilateral orbital tumors can be removed in one stage by utilization of the coronal or Souttar flap. The incision goes across the head, paralleling the coronal suture. Then the scalp, pericranium, temporal fascia and muscles anterior to the incision are displaced forward to

MATERIAL

As a result of the observations of the ophthalmologists, radiologists, neurologists, neurosurgeons and pathologists at the clinic and a study of a group of cases in which intraorbital tumors have been removed following the elevation of a frontal skull flap and the removal of a part of the orbital roof, our ideas for the successful handling of tumors within the orbit have become well crystallized.

In this paper, which of necessity cannot be a monograph on orbital tumors, we have excluded all tumors

that have arisen on or in the face and invaded the orbit secondarily. We have excluded tumors of the maxillary antrum that have secondarily invaded the orbit. Likewise we have excluded from this report many tumors, meningiomas, gliomas and lymphoblastomas which were mainly or largely (as far as size was concerned) intra-

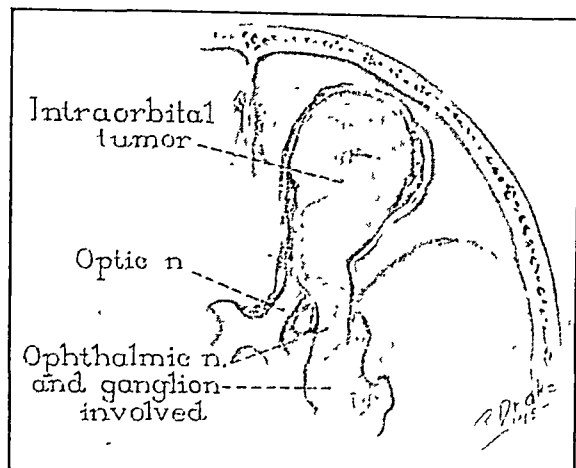


Fig. 2 (case 30).—Neurofibroma which involved the intraorbital portion of the ophthalmic nerve and extended intracranially to involve the gasserian ganglion and all three peripheral branches.

cranial with minimal intraorbital extension. What is even more important, we have excluded several hundred tumors which were located in the anterior position of the orbit and which were operated on by the ophthalmic surgeons.

ANALYSIS OF DATA ON ORBITAL TUMORS REMOVED TRANSCRANIALY

In a group of 35 consecutive cases⁶ in which intra-orbital tumors were approached through the roof of the orbit after frontal craniotomy had been performed, it was found that 22 patients were female and 13 were male. The average age of the patients at the time of operation was 27.5 years, the oldest patient being a man aged 53 and the youngest a boy aged 2 months.

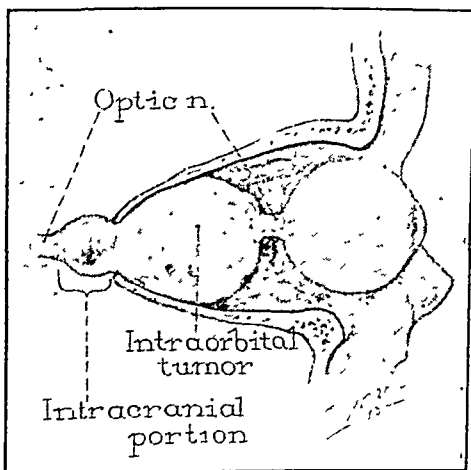


Fig. 3 (case 25).—Astrocytoma of right optic nerve showing intracranial extension which could be removed only by means of a transcranial approach.

The tumor occurred in the right orbit in 18 cases and in the left in 17 cases. There was no case of removal of bilateral intraorbital tumors in this series. Proptosis

or prominence of the eye on the side of involvement was the most important symptom of which complaint was made and the most frequently detected sign. Thirty-three patients had proptosis or exophthalmos (the only exceptions being cases 10 and 16, table), and in 20 cases it was the first symptom that the patient had noticed. Failing vision and headaches are late symptoms, and headaches usually mean extension of the tumor beyond the confines of the orbit.

Roentgenologic examination of the head and orbits, including the optic foramina, is a most valuable part of the investigation of the patient suspected of having an intraorbital tumor (fig. 1). In 27 of the 35 cases here analyzed the roentgenologist gave definite help in establishing the diagnosis by reporting changes in the configuration of the orbit, alterations in the size and shape of the optic foramina, the presence of erosion or formation of osteoma involving the walls of the orbit or the presence of calcium (signifying old hemorrhage) within the orbit.

When the tumors were uncovered and removed, it was found that in 22 cases the tumor was entirely within the orbit, whereas in 10 cases there was intracranial extension. In the 3 remaining cases there was extension into adjacent bone or into the frontal sinus and in 1 case even into the nose.

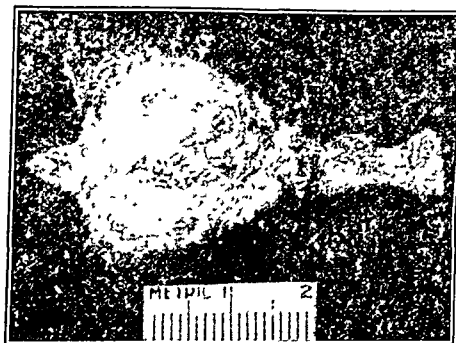


Fig. 4 (case 25).—Astrocytoma of optic nerve removed transcranially.

The pathologic character of the lesions varied a great deal and can be determined for each case by referring to the table.⁷ There was only one death in the series and this case, which is reported in detail, was most unusual.

CASE 30.—A boy aged 1½ years was observed by the parents, when the child was 3 months of age, to have a "bump" in the right frontotemporal region, although they had noted shortly after birth that the right upper eyelid was thickened and larger than the left.

Examination revealed considerable proptosis of the right eye, but accurate exophthalmometer reading was impossible because of poor cooperation. There was a soft nodular puffiness throughout the right lid, at the outer portion of the fissure and extending into the temporal region. At the posterior part of this region was a small, irregular, hard tumefaction, which was considered bony. Fundus examination was not done. Roentgenologic examination revealed what happened to be an anomaly of development of the skull in the region of the right orbit.

On June 24, 1944 right transfrontal craniotomy was performed with right orbital decompression and resection of an intra-

7. References to cases mentioned in the table as having been reported previously.
Benedict, W. L., and Love, J. G.: Cavernous Hemangioma of the Orbit with Hypertrophia. Report of a Case, *Am. J. Ophth.* 22: 1149-1151 (Oct.) 1939.
Love, J. G., and Rucker, C. W.: Meningioma of the Sheath of the Optic Nerve; Report of a Case, *Arch. Ophth.* 23: 377-380 (Feb.) 1940.
Love, J. G.: Transcranial Removal of an Intraorbital Meningioma, *Proc. Staff Meet., Mayo Clin.* 10: 213-215 (April 3) 1935.

6. Adson, Craig; Uihlen and Kloos gave permission to have their cases included. In 21 of the cases operation was performed by one of us (Love).

orbital tumor and subtotal resection of the intracranial portion of the same tumor. When the bone flap was turned down there was found an osteoma of the outer third of the roof of the right orbit. The bony mass which had been felt in the temporal area prior to operation was an outward bulging of the squamous portion of the temporal bone. When the roof of the orbit, including the osteoma, had been removed the periorbital appeared abnormally thin. When it was incised, a very firm tumor, extending from the anterior portion of the orbit to the superior orbital fissure, was uncovered. It felt very fibrous and suggested a neurofibroma. A specimen of its wall, submitted for fresh frozen section diagnosis, was reported as definitely neoplastic. Since no other abnormal mass in the orbit could be felt, the tumor was divided and nerve bundles were found in it. The nerve was larger than any nerve normally within the orbit, including the optic nerve, and because of its position it seemed unlikely that it could be the optic nerve. The anterior portion of the neoplastic nerve was dissected from the anterior portion of the orbit and removed. Then the nerve was dissected backward to the superior orbital fissure. The dura along the wing of the sphenoid was then opened to be sure of the exact location of the optic nerve. It was found at least 1.5 cm. below the level of, and mesial to, the aforementioned neoplastic nerve. It was normal in color and size.

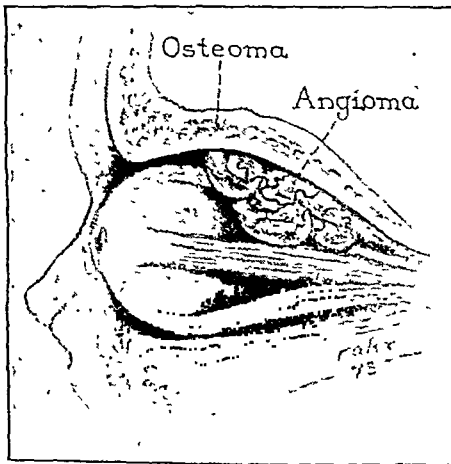


Fig. 5 (case 22).—Size and position of intraorbital angioma that was removed trans-cranially.

The dura mater along the tip of the temporal lobe was then incised. Much to our surprise, it was about ten times as thick as it should have been and very vascular, suggesting a sessile type of meningioma. The involved dura was incised toward the midline below and the incision was extended upward over the temporal lobe and the inferior portion of the frontal lobe to join with the previously made incision along the wing of the sphenoid. Practically all of this dura was involved in this process. Then the neoplastic nerve and the involved dura were grasped and dissection was carried down to the cavernous sinus, at which point a stick tie of silk was placed around the nerve, which now was proved to be the ophthalmic division of the fifth nerve. The involved dura and neoplastic nerve were resected. The foramen rotundum and foramen ovale were identified, and it appeared that the branches of the fifth nerve going through these foramina were likewise involved (fig. 2). It was impossible to free the dura mater from the three branches of the gasserian ganglion and from the ganglion itself. It seemed that in order to resect the ganglion and remove it with all three branches it would be necessary to open the cavernous sinus. Since the patient had already been under anesthesia for a long time and since the tumor was reported as benign, it did not seem advisable to attempt complete removal of the ganglion and the maxillary and mandibular divisions. All bleeding was under control. The dural defect was covered with animal membrane. The bone flap was tied in place with two pieces of wire. The muscle, fascia and galea were closed

with continuous number 0 chromic catgut and the skin was closed with a continuous cotton suture.

The pathologist reported the tumor as a fibrous neurofibroma. In spite of the fact that the child was given a transfusion during the operation and again that evening and that the postoperative course was fairly good for eighteen hours, at the end of that period the patient suddenly had a generalized convulsion, which was controlled by aspirating cerebrospinal fluid through the cra-



Fig. 6 (case 22).—Appearance eleven days after transcranial removal of intraorbital angioma (see fig. 5).

nial flap. Hyperthermia developed and could not be controlled. The patient died approximately twenty-four hours after operation.

Figures 3 to 12 inclusive illustrate various cases in which intraorbital tumors were removed by the transcranial approach.

Short summaries of 4 cases illustrative of the problems involved in the diagnosis and treatment of tumors of the orbit follow:

Case 33.—A boy was the youngest patient in our series of intraorbital tumors. At the time of operation he was only 2 months of age, and naturally the examination was not as easy as it would have been if he had been an adult.

The patient was referred to the clinic because of severe proptosis of the right eye since birth. The mother was under the impression that the abnormal prominence of the right eye had not increased. On examination the right eye was found to be pushed forward and temporalward. Because of lack of

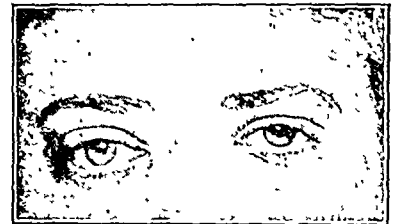


Fig. 7 (case 23).—Proptosis of right eye due to osteitis fibrosa cystica involving the roof of the orbit.

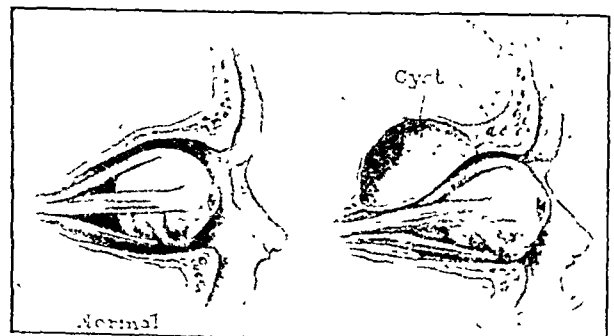


Fig. 8 (case 23).—Bone cyst pushing the eyeball forward in the orbit.

cooperation the exophthalmometer could not be used, but it was estimated that the exophthalmos was at least 10 mm. and probably more. It was observed that when the child was asleep the right eye was partially open (fig. 13). A nonpulsating mass could be palpated on the nasal side of the eyeball. The eye was freely movable but could be pressed backward into the orbit only slightly. The pupil was well dilated and the

fundus was easily seen. No choking of the disk was present and there was no edema of the retina. Roentgenologic examination of the head revealed an expanding lesion of the right orbit, which had caused enlargement of the orbit and orbital fissure.

Right transfrontal craniotomy was performed with the patient under ether anesthesia. Because of the youth of the patient



Fig. 9 (case 23).—Lateral view of head showing cyst in roof of right orbit.

no burr holes were necessary. After the scalp had been reflected over the right frontal region, most of the right frontal bone was freed from the underlying dura mater and the longitudinal sinus. The flap was narrowed at its base just above

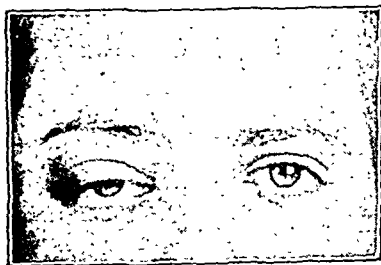


Fig. 10 (case 23).—Appearance twelve days after removal of orbital tumor by transcranial approach (see figs. 7, 8 and 9).



Fig. 11 (case 23).—Appearance twelve days after intraorbital approach.

uncovered. The tumor was removed piecemeal with a curet and sucker. One portion of the tumor was attached to a small nerve at the junction of the mesial and posterior walls of the orbit. This nerve was silver clipped and divided in order to remove the attached tumor.

After removal of the tumor there was a large cavity within the posterior mesial portion of the orbit. The dura mater was not opened at any time. The optic nerve was not exposed. The superior orbital fissure, which was enlarged in the roentgenogram, was not visualized. The bone flap was replaced and anchored in position with a few interrupted silk sutures. The scalp was replaced and closed hurriedly with through-and-through continuous silk sutures because the child's condition at this point was critical in spite of the fact that we had taken the precaution of placing a needle in the vein in the left arm and administration of fluids had been started before the operation was begun. The tumor was reported as a slow growing cellular neoplasm either from a nerve sheath or from the meninges. The note was made that it was not a typical neuroma or a typical meningioma but a fibrosarcoma. A hematoma developed postoperatively between the scalp and the bone flap and this became infected. With the subcutaneous use of penicillin and application of sterile warm moist packs to the scalp the infection



Fig. 12 (case 10).—Appearance three and a half months after transcranial removal of intraorbital meningioma. Six and a half years later she reported "no further trouble" with her eye.

was controlled and the patient was able to return home approximately six weeks after operation (fig. 14). Subsequently he was reported in good condition.

CASE 12.—An intradiploic, intracranial and intraorbital epidermoid tumor was removed through a right transfrontal craniotomy. A woman aged 30 was referred to one of us (Benedict) because of pain and proptosis of the right eye, which had been called to her attention by her sister six months prior to her coming to the clinic. It was impossible from the history to determine whether the symptoms had been sudden or gradual in onset.

Examination revealed proptosis of 7 mm. in the right eye. The lids protected the eye well. On palpation there was considerable tenderness on pressure at the inner third of the supraorbital margin with the sensation of fullness. Nothing could be expressed from the tear sac. Extraocular movements were slightly impaired in all directions. There was alternating exotropia. The pupils and pupillary reflexes were normal. Tactile tension was within normal limits. The anterior cham-

bers were of normal depth. The irises were normal. The lenses and the vitreous were clear. The fields of vision were normal. The fundus of the right eye showed a disk of good color with blurring of the upper and lower poles and nasal margin with what appeared to be early edema extending into the nasal portion of the retina. The veins were mildly engorged. The macular regions showed an increased light reflex. No hemorrhages nor exudates were seen. Examination of the left fundus revealed a disk of good color with slight blurring of the upper and nasal margins suggesting early edema. The rest of the fundus was normal. The vision was 6/5 in each eye.

Roentgenologic examination of the head revealed a destruction of the posterior inferior portion of the right orbit and wing of the sphenoid extending laterally where there was irregular erosion of the inner table of the lateral portion of the frontal bone and contiguous portion of the sphenoid and parietal bones. The changes in the bones were interpreted as those of pressure secondary to a benign type of tumor, probably an atypical epidermoid.

A right frontofrontal type of craniotomy was performed. A large cystic epidermoid tumor was evacuated and the capsule



Fig. 13 (case 33).—Two months old child with tumor in right orbit. Note inability to cover globe with eyelids.

of the tumor, which was partially intradiaploic but also intracranial and intraorbital, was removed. The roof of the orbit had been completely and cleanly eroded by the tumor and it was easy to follow the continuation of the intracranial dura mater along the right optic nerve to form the periorbita. It was not necessary to incise the dura mater or the periorbita in this case, as the capsule of the tumor was easily stripped from these structures.⁸

Occasionally the nose and throat surgeon is the first to encounter a brain tumor or an intraorbital tumor when he attempts to remove a "polyp" from the ear or from the nose. Meningiomas fairly often extend into the external auditory canal and into the frontal sinuses or even into the nose itself. In the following case an intraorbital tumor was first attacked within the nose by a nose and throat surgeon:

CASE 17.—A man aged 30 had suffered from nasal obstructive symptoms for two years and had had some discharge from the right nostril for one and a half years. He had known of a growth in the right nostril and of unusual prominence of the right eye for one year. For two months there had been some blurring of vision. The patient stated that two months

before coming to the clinic he had had an intranasal operation for the removal of a mass the microscopic examination of which was reported as showing either a psammoma or a psammoma-sarcoma. It was after this operation that the patient began to note blurring of vision.

The patient's general physical appearance was not remarkable except for rather severe proptosis of the right eye. The vision



Fig. 14 (case 33).—Post-operative appearance. Lids now cover the eyeball, since proptosis has been relieved by removal of tumor.

was 14/21 in each eye. Pupils, reflexes and fields were normal. Although there was 4 mm. of proptosis in the right eye, no abnormal mass could be palpated within the orbit. The extraocular muscular functions were normal. Examination of the fundi revealed structurally full disks of good color and definition. The retinal veins were relatively full. Examination of the ears, nose and throat

revealed a slight retraction of both ear drums and slight conduction deafness on the right side. The pharynx was injected and the tonsils were red. There was a scar on the right side of the nose and there was a firm nonulcerating mass appearing in the right middle meatus. Roentgenologic examination of the skull and accessory sinuses revealed a large soft tissue mass in the frontal sinuses and extending down into the frontoethmoid region. There were decalcification and posterior expansion of the posterior wall of the frontal sinuses. These findings suggested a benign tumor, probably a large mucocoele. The tissue removed elsewhere



Fig. 15 (case 17).—Appearance eleven days after transcranial removal of meningioma from right orbit, right frontal sinus and nose. Note scar in right eyebrow of previous external frontal operation performed elsewhere.

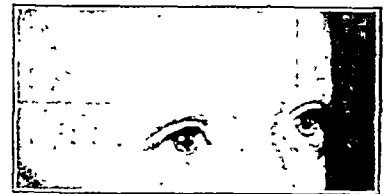


Fig. 16 (case 21).—Boy aged 3 years who had had increasing prominence of left eye for three weeks.

was available for examination. Our pathologist reported that it was a dural endothelioma containing numerous psammoma bodies.

In view of the physical findings and the report of a tumor of the psammoma type having been found in the nose before the patient came to the clinic, we made a diagnosis of an intracranial meningioma with intraorbital and intranasal exten-

8. Love, J. G., and Kernohan, J. W.: Dermoid and Epidermoid Tumors (Cholesteatomas) of Central Nervous System. J. A. M. A. 107:1876, 1932 (Dec. 5) 1936.

sion and advised right transfrontal craniotomy for removal of the tumor. When the bone flap had been elevated and the dura mater was being elevated from the roof of the orbit, it was noted that the roof of the right orbit bulged within the cranium and was parchment thin in some areas and completely destroyed in other areas. The nasal half of the roof of the orbit was most involved. With a punch, a gallbladder scoop

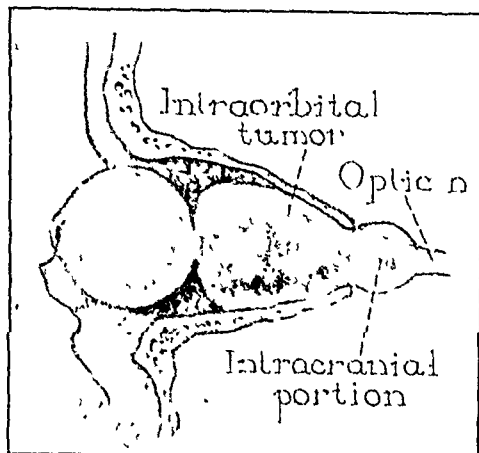


Fig. 17 (case 21).—Astrocytoma of left optic nerve, showing intra-cranial extension, which could be removed only by means of a transcranial approach.

and pituitary forceps, a large amount of tumor was easily removed. When the tumor within the orbit was removed, a large amount of tumor could be seen in the frontal sinus and downward into the nose. As the tumor was being removed, pus was encountered in the mesial half of the orbit. About $\frac{1}{2}$ teaspoon (2 cc.) of pus was removed. A culture of the pus was taken and the wound was swabbed thoroughly with tincture of mercuric iodine. All of the tumor grossly was removed. It was not necessary to open the dura mater at any time. This, we considered, was very fortunate in view of the finding of pus at the operative site. A Penrose cigaret drain was left within the cavity from which the tumor had been removed and was brought out of the incision laterally. The incision was closed in layers in the usual fashion. The tumor was reported by the pathologist as being a meningioma with psammoma bodies. Subsequent report on the culture of pus taken at the time of operation showed no growth of organisms. The patient's convalescence was entirely uneventful. He was dis-

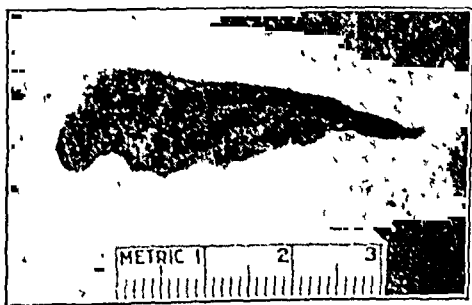


Fig. 18 (case 21).—Astrocytoma of optic nerve removed transcranially. Patient is well and going to school two and a half years after removal of tumor.

missed from the hospital on the eighth postoperative day, at which time his wound was well healed. He was allowed to return home on the twelfth day after operation (fig. 15).

The importance of maintaining an intact dura mater when removing intraorbital tumors transcranially is emphasized by case 17, since the pus was found within the tumor and because it was necessary to enter the frontal sinus and the nose (a potentially infected region) in order to effect a complete removal of this tumor.

CASE 21—A boy aged 3 years was referred to the clinic because of increasing prominence of the left eye, which had been noted only three weeks prior to registration. Aside from the proptosis, the child was entirely asymptomatic.

Examination revealed 2 mm. of proptosis of the left eye (fig. 16). The pupils were equal and reacted normally to light. There was edema of the right optic disk of 1 to 2 diopters and of the left disk of 5 diopters.⁹ Roentgenologic examination of the head gave negative results. Left transfrontal craniotomy for a tumor of the left optic nerve was advised and carried out. The roof of the left orbit was very thin, particularly posteriorly toward the apex and over the optic foramen. The periorbital was not discolored and it was impossible to feel the tumor with a finger. The dura mater was incised along the lesser wing of the sphenoid bone in order to expose both optic nerves and the chiasm. When the frontal lobe was elevated from the chiasm, a tumor of the left optic nerve was detected. About 4 to 6 mm. of the tumor could be seen within the cranium; that is, proximal to the left optic foramen. When this mass was traced into the orbit the bulk of the tumor was found to be intraorbital. The optic nerve was silver clipped just distal to the chiasm where it appeared normal, and then the nerve and tumor mass were freed up to the globe. A silver clip was placed snugly against the sclera and the nerve was divided proximal to the silver clip; that is, toward the chiasm. The ophthalmic artery was not identified as such but there was a band of tissue, which was very dense and still held the tumor in place. This was silver clipped and divided, whereupon the

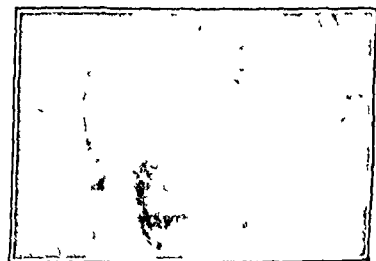


Fig. 19 (case 21).—Appearance of patient sixteen days after removal of astrocytoma of left optic nerve.

entire tumor with a portion of the optic nerve, which appeared normal, was lifted from its bed (fig. 17). There was no bleeding. The incision was closed in the usual manner without drainage. The tumor was reported by the pathologist as being 3 cm. in length, the diameter being 8 mm. at one end, 12 mm. at the other end and 3 cm. in the middle (fig. 18). Microscopically it was an atypical astrocytoma.

The patient's convalescence was uneventful. He was dismissed from the hospital on the eleventh postoperative day and from the care of the clinic on the seventeenth day after operation (fig. 19). At the time of the latest report, two and a half years after operation, he was attending kindergarten and "getting along fine" according to his mother.

SUMMARY

In a consecutive series of 35 cases of intraorbital tumors the transcranial approach through the roof of the orbit afforded excellent visualization of the pathologic growth and the important structures within the orbit and permitted removal of tumors which could not otherwise have been removed. There was only one death in the series, and the results generally have been good.

CONCLUSIONS

This paper further emphasizes the comment made by Adson and one of us (Benedict)¹⁰ in their report of a case (case 1 of this paper) in which a hemangioendothelioma of the orbit was removed through a transcranial approach; namely, "The ease with which the hemangioendothelioma was removed suggests many possibilities for the transcranial approach to vascular and neoplastic lesions situated in the retrobulbar space of the orbit."

⁹ The edema of the right optic disk never was explained satisfactorily.
¹⁰ Adson, A. W., and Benedict, W. L. Hemangioendothelioma of the Orbit. Removal Through Transcranial Approach. Arch. Ophthalm. 12:1, 1914.
490 (Oct.) 1914.

PENICILLIN TREATMENT OF
SCARLET FEVERBACTERIOLOGIC STUDY OF THE NOSE AND THROAT
OF PATIENTS TREATED INTRAMUSCULARLY OR
BY SPRAY WITH PENICILLIN AND A
COMPARISON WITH SULFADIAZINE

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Laboratory¹ and clinical² studies have shown that penicillin is highly effective against the hemolytic streptococcus. It is more active than sulfonamides in protecting mice against lethal infections with this organism.³ There are also a number of reports of hemolytic streptococcal infections which resisted sulfonamide therapy but responded well to penicillin.⁴ Such observations and the lack of toxicity of penicillin have made it the treatment of choice in severe hemolytic streptococcal infections.

Direct comparisons of sulfonamide and penicillin therapy in hemolytic streptococcal infections are included in the reports already mentioned. In addition, Plummer and his co-workers⁵ found that hemolytic streptococci could no longer be found in the majority of throat cultures taken from patients with pharyngitis or tonsillitis after forty-eight hours or more of intramuscular treatment with 15,000 units of penicillin every four hours. The organisms frequently reappeared and symptoms relapsed, if the treatment was carried out for less than six days. Sulfadiazine, on the other hand, reduced the number of organisms in the cultures while the treatment was being given, but they were again found in large numbers after that treatment was stopped. Similar

findings with respect to sulfadiazine were also noted by others.⁶

In this paper are reported the results of bacteriologic studies of four similar but small groups of cases of scarlet fever treated: (A) without sulfonamides or antibiotics, (B) with penicillin intramuscularly, (C) with sulfadiazine orally and (D) by spraying the nose and throat with penicillin solution. There were only 9 patients in each group, but the differences observed were sufficiently striking to warrant this report.

PATIENTS, MATERIALS AND METHODS

The patients studied were admitted to the South Department⁷ of the Boston City Hospital between January and May 1945. They all had the typical clinical picture of scarlet fever without septic complications; none had received any form of specific therapy before entry and all were old enough to cooperate with the methods of treatment and study. They were divided more or less in rotation. Although it was hoped to obtain groups which were of equal severity and comparable in other respects, the group treated with intra-

Certain Relevant Data in Cases Studied

Group.....	A	B	C	D
Number of cases.....	9	9	9	9
Ages (years):				
4 to 6.....	2	1	6	2
7 to 11.....	6	4	3	4
12 to 15.....	1	4	0	3
Duration at entry:				
(a) Symptoms				
Less than 1 day.....	2	1	0	1
1 to 3 days.....	6	8	8	7
4 to 7 days.....	1	0	1	1
(b) Rash				
Less than 1 day.....	3	2	3	4
1 day.....	6	7	5	4
2 days.....	0	0	1	1
Severity at entry:				
Mild.....	6	1	5	5
Moderate.....	2	6	4	4
Severe.....	1	2	1	0
Catarrhal otitis media.....	2	1	2	3
Previous tonsillectomy.....	3	2	1	4

muscular penicillin included more patients who were moderately or severely ill and also more of the older children. The distribution of cases according to age, duration of symptoms and rash at the time of entry and the number who previously had tonsillectomy are listed in the accompanying table.

The treatment employed was as follows: Group A, no sulfonamides or penicillin. One patient, A1, was given 70 cc. of scarlet fever convalescent serum on the second day because of pronounced toxicity. Group B, 10,000 units of penicillin intramuscularly every three hours, except B5, who weighed more than 100 pounds (45.4 Kg.) and was given doses of 15,000 units. Group C, sulfadiazine 0.06 Gm. per pound per day, given in six doses plus an initial dose which was two thirds of the daily dose. Group D, a solution containing 1,000 units of penicillin per cubic centimeter in isotonic solution of sodium chloride and five sprays from a De Vilbiss atomizer given into each nostril and a similar number into the posterior pharynx. Patients D1 and D2 received this treatment only four times a day, shortly after each meal and at bed time, a total of 100,000 units

6. Rubenstein, A. D., and Foley, G. E.: The Effect of Chemotherapy on the Duration of the Carrier State Following Scarlet Fever, *New Eng Land J. Med.* 233: 315 (Sept. 13) 1945. Comments on Acute Respiratory Diseases.

7. This study was made possible through the courtesy and cooperation of Dr. Edwin H. Place, physician in chief.

From the South Department, Thorndike Memorial Laboratory and Second and Fourth Medical Services (Harvard), Boston City Hospital and the Departments of Medicine and Bacteriology and Immunology, Harvard Medical School.

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5. Plummer, Norman; Duerschner, D. R.; Warren, H. D.; Rogliano, F. T., and Sloan, R. A.: Penicillin Therapy in Hemolytic Streptococcal Pharyngitis and Tonsillitis, *J. A. M. A.* 127: 369 (Feb. 17) 1945.

being given; the others in this group were sprayed every four hours day and night and each received a total of approximately 200,000 units. The treatment in groups B, C and D was begun within a few hours after entry and was continued for seven full days. All gargles and nose drops were eliminated from the routine supportive therapy in every case.

Cultures from the nose and throat were taken of every patient on admission, twenty-four hours after treatment was begun, two or three more times during the therapy and twice weekly thereafter until the day of discharge. A pair of cotton swabs was swept five or six times across the posterior pharynx and over each tonsillar fossa, and separate single swabs were rotated in each nostril. The nasal and pharyngeal swabs were streaked, soon after they were taken, on separate agar plates containing 10 per cent horse blood. Substreaks were made serially over each of the four quadrants of the plate in order to obtain a rough quantitation of numbers of colonies that developed. In group D about half of the cultures were taken between one and two hours after spraying, while the remainder were obtained less than one hour before the time of spraying.

After twenty-four hours' incubation, roughly quantitative estimations (0 to 4+) were made of the growth of colonies of beta hemolytic streptococcus, *Staphylococcus aureus*, alpha hemolytic streptococcus, pneumococcus and *Hemophilus hemolyticus*. Identification was made from colony morphology and from stained smears.⁸ Subcultures of beta hemolytic streptococci were further classified according to the Lancefield groups, and those of group A were typed by agglutination and the types or representative strains were checked by the precipitin method.⁹ The hemolytic and plasma coagulating properties of strains of *Staphylococcus aureus* were noted. Pneumococci were typed by the Neufeld method. When transparent hemolytic colonies appeared in large numbers, ten such colonies were picked at random. Stained smears were examined, and if they all proved to be gram negative bacilli they were classified as *Hemophilus hemolyticus* and the remainder were assumed to be the same organism. The group A streptococci were all tested for sensitivity to penicillin by the method of Rammelkamp and Maxon.¹⁰

No special attempt was made to protect the patients from cross infections. Patients were admitted to open wards containing four or six beds each, with nurses each attending patients in more than one room. When they were allowed out of bed, the patients from the various rooms mixed freely and played together. Only those who developed other contagious diseases were isolated.

All of the cultures were made by the same observer, who made detailed clinical notations at the time. Routine blood and urine examinations were also done at frequent intervals.

RESULTS

Persistence of Hemolytic Streptococcus.—The results of the pharyngeal and nasal cultures in each of patients are shown graphically in charts 1 and 2, respectively. Only the findings with respect to hemolytic streptococci are shown in these charts.

Pharyngeal cultures were positive for hemolytic streptococcus on entry in all but 2 of the patients, and in both of them moderate numbers of these organisms were found in the cultures taken on the following day. All of the strains obtained from these original cultures were Lancefield group A strains: fifteen were type 2, four were type 4, three each were type 11 and type 22, two were type 10, there was one strain each of types 1, 17, 18, 19, 23 and 26, and one strain showed cross reactions with types 17, 19 and 23 antisera. Two strains could not be classified with the available serums (types 1 to 30).

Nasal cultures taken on admission were positive for hemolytic streptococcus in only 11 patients, but 9 others had them in subsequent cultures taken during the first six days. Most of the latter were found on the day after entry. The types obtained from the nose corresponded to those found in the throat in every instance. The results of subsequent cultures varied widely in the four groups, each of which will therefore be considered separately.

GROUP A (no sulfonamide or penicillin). The pharyngeal cultures in this group showed minor fluctuations in the numbers of beta hemolytic streptococci, but the original strain was found in every instance. Persistently negative cultures were obtained before discharge in only 4 of the 9 patients in this group. The first negative culture in these 4 cases was obtained on the 15th, 19th, 28th and 29th days, respectively.

The nasal culture showed hemolytic streptococci on admission in only 1 patient in this group, but these organisms appeared in cultures of all the other 8 patients from one to nineteen days later. They were obtained intermittently in 2 cases and during a brief period only in 2 others. There were considerable fluctuations in the numbers of organisms found in the cultures obtained on different days in the same patients. The same type was isolated in each case from all of the nasal and pharyngeal cultures except in A4, in which type 1 was isolated from the nose after the first week, while type 2 was found in the throat.

GROUP B (intramuscular penicillin). The most striking effects of treatment were noted in this group. Throat cultures became and remained free of the original types of hemolytic streptococci after twenty-four hours in 1 case and in forty-eight hours in 6 others. In the 2 remaining patients the hemolytic streptococci persisted with temporary lapses until one week after the treatment was stopped. In 3 cases of this group hemolytic streptococci of types different from the original one appeared in the throat cultures near the end of the period of observation from one to five weeks after the penicillin treatment was stopped.

All the nasal cultures became or remained free of hemolytic streptococci throughout the period of treatment except in 1 case, in which they were recovered during the first two days. Strains of new types appeared in the nasal cultures of 2 patients and corresponded to those found in their throats at that time.

GROUP C (oral sulfadiazine). The results in this group were similar to those found in sulfonamide-treated cases of hemolytic streptococcal infections by others.¹¹ Hemolytic streptococci were reduced in num-

8. The cultural studies were carried out by Mildred W. Barnes.
9. The streptococcus grouping and typing was done by Ruth Drew and Alice Northrop in the Department of Bacteriology and Immunology of the Harvard Medical School as part of the studies of the Commission on Epidemic Surveys of the Board for the Investigation and Control of Epidemic Diseases in the Army, Preventive Medicine Service, Office of the Surgeon General, U. S. Army.

10. Rammelkamp, C. H., and Maxon, T.: Resistance of *Staphylococcus aureus* to the Action of Penicillin. *Proc. Soc. Exper. Biol. & Med.* 51: 384 (Dec.) 1942.

11. Julianelle, L. A., and Siegel, Morris: The Epidemiology of Acute Respiratory Infections Conditioned by Sulfonamides: II. Gross Alterations in the Nasopharyngeal Flora Associated with Treatment. *Ann. Int. Med.* 22:10 (Jan.) 1945. Watson, Rothbard and Swift.¹² Plummer, Duerschner, Warren, Rogliano and Sloan.¹³ Commission on Acute Respiratory Diseases.¹⁴ Rubenstein and Foley.¹⁵

ber or could not be found intermittently during the treatment. The original types of streptococci recurred or increased in the throat cultures obtained after the sulfadiazine was discontinued in 8 of these cases. Types differing from the original ones appeared toward the end of the period of observation in 4 patients, including the only one of this group in whom the original type could not be recovered after two days of treatment.

The results of the nasal cultures in this group were somewhat similar to those found in the control cases, except that the streptococci appeared for the first time during treatment less frequently in the present group. New types appeared in 3 of these cases, which in 2 instances corresponded to the new strains recovered from the throats in the same patients at about the same time.

GROUP D (penicillin spray). The results of the throat cultures in this group differed only slightly from those obtained in the controls. In only 1 case did the cultures remain free from hemolytic streptococci for more than one observation even during treatment. The nasal cultures, on the other hand, either became free from hemolytic streptococci after the second day or remained free from the pharyngeal strain throughout the treatment period. After the penicillin spray was discontinued, however, the original pharyngeal strains appeared in almost pure culture in 6 of the cases. A new type appeared at the end of the observation period in 1 of the 2 patients whose nasal cultures had remained free from streptococci.

Sensitivity to Penicillin.—All of the strains of beta hemolytic streptococci isolated from each of the four groups of cases, both before and after the treatment period, were tested and found to be highly sensitive to penicillin. They all were either similar in sensitivity to the control strain of streptococcus number 98 or showed at most a twofold difference. None of the strains of the same or of new types isolated after the treatment period differed in sensitivity from the original strains isolated from the same patients at the time of admission.

OTHER ORGANISMS

Although this study was designed primarily for the purpose of evaluating the bacteriologic effects of the various therapies on the hemolytic streptococcus, a summary of the findings with respect to some of the other organisms is of interest.

Staphylococcus aureus occurred in throat cultures in only a few of the patients. Even in these it was found only in small numbers, and none of the strains showed hemolysis of the horse blood. About half of them were coagulase positive. Interestingly enough, none were found throughout the treatment period in patients who received penicillin intramuscularly, although they occurred in later cultures from 4 of these patients. Only 2 of those treated with penicillin spray had staphylococci on one or two occasions during treatment.

The nasal cultures, on the other hand, often showed large numbers and almost pure cultures of staphylococci, almost all of which were coagulase positive and many showed hemolysis of the horse blood. They were present throughout the treatment period in varying numbers both in the controls and in the sulfadiazine treated cases, but they rapidly disappeared or persisted in small numbers in the nasal cultures in both of the penicillin treated groups. After the treatment period, however,

they were present in large numbers in 4 of the control patients and in almost all of those treated with intramuscular penicillin or with sulfadiazine. Only small numbers were found during the third week or later in 3 of those who had received penicillin by spray.

Pneumococci of specific serologic types were found sporadically during the treatment period in the nose and throat of 1 patient and only in the nose of 5 others. Of these 6 patients there were 2 each in groups A and C and 1 in each of the penicillin treated groups. Pneumococci appeared for the first time and in small numbers after the treatment was ended in 2 of those in group B.

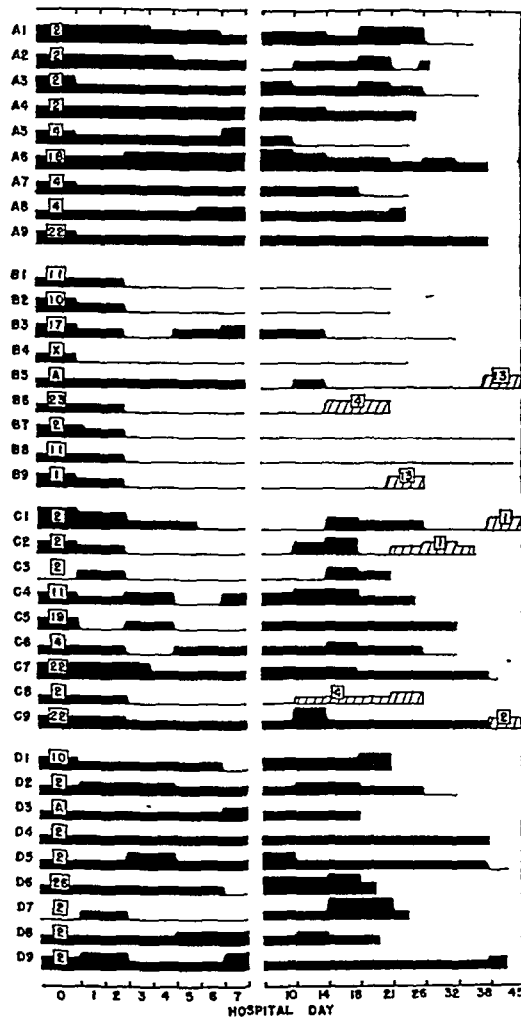


Chart 1.—Hemolytic streptococci in pharyngeal cultures. The case numbers are given on the extreme left: A1-9 received no penicillin and no sulfonamides; B1-9 received intramuscular penicillin for seven days; C1-9 received sulfadiazine orally for seven days and D1-9 received a spray of penicillin solution for seven days. The numbers in the squares above hospital day 0 indicate the type of hemolytic streptococcus originally found in the throat. X = cross reaction with types 17, 19 and 23 antiserums; A = no reaction with available antiserum (types 1-30). The length of each line indicates the period of observation. The height of the solid bar is intended to convey a rough quantitation of the number of hemolytic streptococci of the original type and the cross hatched bar indicates the numbers of streptococci of new types which appeared later and are designated by the numerals.

Alpha hemolytic streptococci were found in moderate or large numbers in throat cultures throughout most of the period of observation in almost all of the cases. In most of those treated with penicillin, either intramuscularly or by spray, they disappeared from the cultures during the last two or three days of treatment, only to reappear later in larger numbers. Hemophilus hemolyticus, which is somewhat similar to the staphylococcus

in its susceptibility to penicillin,¹² appeared only sporadically in the nose and throat cultures. Interestingly enough, this organism occurred in moderate numbers during the treatment period in 5 of those who received penicillin intramuscularly and in 1 who received it by spray. It was not recovered from any of the cultures in the sulfadiazine treated cases.

CLINICAL RESULTS

The clinical results need only to be mentioned briefly, since the numbers of cases were too few to permit any definite comparisons or conclusions. The average duration of fever, rash and acute toxicity was essentially

average would have been even shorter in group B were it not for the regulations which required all scarlet fever patients to be kept for a minimum of twenty-one days. In addition, 1 of the patients in group B was kept in the hospital for five weeks longer in an attempt to cure a chronic otitis media from which only *Proteus vulgaris* but no hemolytic streptococci was cultured. These findings only corroborate the general clinical impression of a more complete and rapid clinical cure in the cases treated with intramuscular penicillin.

COMMENT

The most striking result of the present study is the demonstration that penicillin given in therapeutic doses intramuscularly is effective in rapidly eliminating hemolytic streptococci from the nose and throat of patients with scarlet fever. When given by spray alone, in the manner used in this study, a concentrated solution of penicillin, like tyrothrycin,¹³ was not effective except possibly in suppressing these organisms in the nose temporarily. Some workers, however, have reported favorable results with local applications of penicillin in the nose and throat in clearing diphtheria carriers.¹⁴ When the intramuscular penicillin treatment was continued for seven days, the original strains of streptococci did not return in the nose and throat after the treatment was stopped. Plummer and his associates⁵ observed a similar effect in cases of streptococcal pharyngitis and tonsillitis. They noted that when penicillin was discontinued the hemolytic streptococci tended to return gradually in the nasopharyngeal cultures, and the frequency of their reappearance was inversely proportional to the length of time the penicillin was administered. Clinical relapses in their cases also occurred if the treatment was carried out for less than six days, and 1 of their patients developed streptococcal sinusitis and pneumonia later, after treatment for six days. In small groups of cases of rheumatic fever treated with intravenous or intramuscular penicillin for longer periods and with larger doses, hemolytic streptococci could not be found in nasopharyngeal cultures after the treatment was started.¹⁵ In similar cases treated for shorter periods, the streptococci often recurred after the treatment was stopped.¹⁶

The experiences with the use of sulfadiazine given orally in full therapeutic doses for seven days were similar to those reported by others in cases of simple pharyngitis.¹⁷ In a recent study of an explosive outbreak of hemolytic streptococcal sore throats in which alternate patients received full doses of sulfadiazine for five days, the percentage of positive cultures for hemolytic streptococci during the time of treatment was about one half of that among the controls that were treated only symptomatically. After sulfadiazine was discontinued, the percentage of positive cultures among the treated and control cases was practically identical.^{17a}

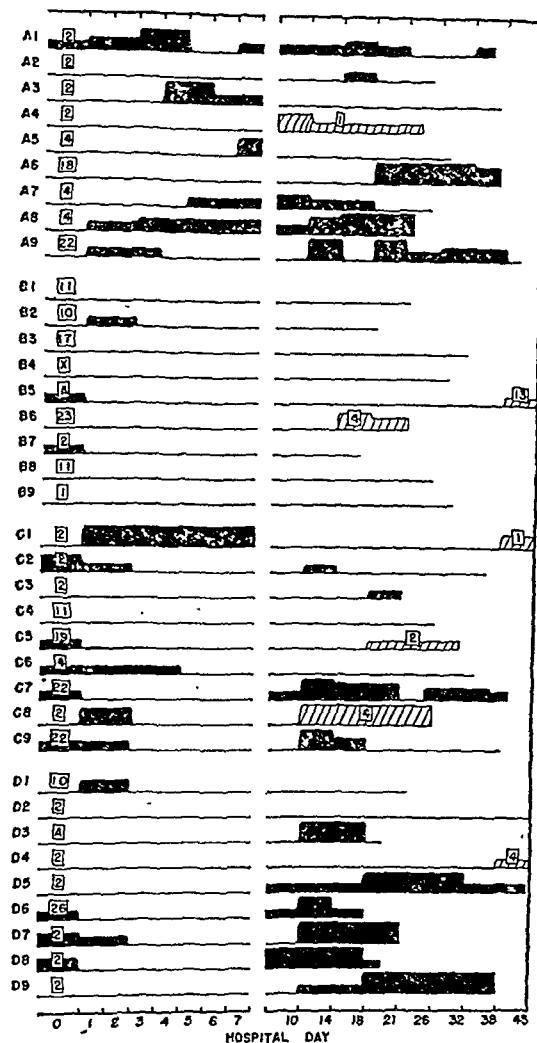


Chart 2.—Hemolytic streptococci in nasal cultures. See notes under chart 1.

the same in all four groups. Sore throat disappeared rapidly and did not recur in the cases treated with intramuscular penicillin, whereas symptoms and signs of pharyngitis persisted in some of those in each of the other groups. Septic complications did not occur in any of the former; whereas rhinitis, catarrhal otitis media and nonsuppurative cervical adenitis each developed in 1 to 4 patients of group A, C and D, and 1 of those in group A and in group C developed a paronychia. The average hospital stay in the cases treated with intramuscular penicillin was twenty-nine days, as compared with thirty-seven days for all of the other groups. This

12. Meads, M.; Ory, E. M.; Wilson, C. and Finland, M.: Penicillin Sensitivity of Strains of Six Common Pathogens and of Hemophilus Hemolyticus. *J. Lab. & Clin. Med.* 20: 725 (Sept.) 1945.

13. Hartley, G., Jr.; Enders, J. F.; Mueller, J. H., and Schoenbach, E. B.: Absence of Clinical Disease in Spite of High Incidence of Group A Hemolytic Streptococci of a Single Type: Failure of Tyrothrycin to Influence the Carrier Rate. *J. Clin. Investigation* 24: 92 (Jan.) 1945.

14. Berman, B. B., and Spitz, S. H.: Treatment of Diphtheria Carriers with Penicillin. *Bull. U. S. Army M. Dept.*, July 1945, No. 87, p. 4.

15. Watson, R. F.; Rothbard, Sidney, and Swift, H. F.: The Use of Penicillin in Rheumatic Fever. *J. A. M. A.* 126: 274 (Sept. 30) 1944.

16. Rantz, L. A.; Spink, W. W.; Boivert, P., and Coggeshall, H.: The Treatment of Rheumatic Fever with Penicillin. *J. Pediat.* 26: 576 (June) 1944.

17. Foster, McEachern, Miller, Ball, Higley and Warren.¹⁶

17a. Commission on Acute Respiratory Diseases: Personal Communication to the author.

The clinical results also suggest that penicillin given intramuscularly during and for several days after the eruptive stage may minimize or even eliminate the late septic complications. The majority of these complications occur after the second week of illness and have been shown by some workers to be due to organisms acquired by cross infection.¹⁸ These should be preventable by adequately treating all of the patients and thus eliminating the sources of cross infections. Furthermore, should these findings be corroborated on a large scale, the present requirement of isolation for scarlet fever patients for three or four weeks would become unnecessary, and patients could be discharged after eight or ten days without danger of giving rise to secondary cases or of cases returning with complications. Such a reduction in the period of hospitalization and the elimination of the case-carriers in military installations might well justify the longer period of intensive treatment even in cases of simple pharyngitis and tonsillitis in which treatment for more than one or two days might otherwise seem superfluous.

Further developments in penicillin therapy may simplify the administration of such a program. Thus the use of penicillin X may result in the reduction in the frequency with which the doses are to be given.¹⁹ It may also be possible to give some of the treatment orally²⁰ or in lozenges.²¹

Penicillin had little or no effect on the strictly toxic or eruptive phase of the disease. In this respect it was similar to sulfonamides.²²

CONCLUSIONS

In patients with scarlet fever treated with penicillin intramuscularly, hemolytic streptococci disappear from the nasal and pharyngeal cultures within forty-eight hours, and if the treatment is continued for seven days the original types of streptococci do not reappear.

Penicillin solution given to similar patients by spraying the nose and throat four to six times a day has very little effect on the hemolytic streptococci in the pharynx but seems to keep the nose free from these organisms while the treatment is being continued.

In similar cases sulfadiazine given orally in full doses for seven days results in a suppression in the numbers of hemolytic streptococci in cultures obtained during the period of treatment only. In this respect the results were comparable to those obtained by others in cases of hemolytic streptococcal pharyngitis and tonsillitis.

The clinical and bacteriologic results suggest that early systemic treatment with penicillin in adequate doses continued for seven days may eliminate the hemolytic streptococcus carrier state and prevent complica-

tions due to this organism. The eruption and toxic manifestations of scarlet fever are not influenced by penicillin.

It should be emphasized that these conclusions are based on a very small number of cases and therefore are only tentative. They require corroboration and elaboration in a larger number of cases of various kinds of hemolytic streptococcal infections.

INTRAVENOUS ANESTHESIA FOR ORTHOPEDIC SURGERY

GEORGE J. THOMAS, M.D.

PITTSBURGH

In the past decade intravenous anesthesia has shown a definite and consistent increase in its application and use. I feel that this form of anesthesia has a definite place in orthopedic surgery for the following reasons:

1. The technic of administration is simple.
2. The induction period is short and pleasant.
3. The usual psychic shock is absent.
4. The depth of narcosis is controllable and sufficient for any orthopedic procedure.
5. It may be repeated without danger of becoming habit forming.

I am not attempting to advocate intravenous anesthesia for all types of orthopedic patients. I wish to emphasize that the contraindications for the use of the intravenous agents must be observed. Children under 7 or 8 years of age, unless very robust, are poor subjects. Apart from their natural fear and small veins, the inertia of the air and their narrow air passages hinder gaseous exchanges and create an undesirable situation in view of their relatively high oxygen requirements. Such patients do very well under tribromoethanol and ether anesthesia, since tribromoethanol prevents psychic shock, which children frequently show during the induction period.

Victims of accidents involving the extremities, who are in shock, do better with nerve block. If intravenous anesthesia is to be used, shock must be treated first, followed by anesthesia and surgery.

THE AGENT OF CHOICE

Among several intravenous anesthetics studied I found pentothal sodium to have the following advantages over other agents:

1. It is equally, if not more, powerful and rapid in action.
2. Twitching is rare.
3. Postanesthetic nausea and vomiting are less frequent.
4. Relaxation is more satisfactory.
5. Recovery is more rapid.

OPERATIONS ON PATIENTS IN PRONE POSITION

Intubation anesthesia is more suitable for patients who are in the prone position or any other position that hinders respiratory movements, or positions that are difficult in controlling the airway.

Preintubation Treatment.—Laryngeal irritability is increased under pentothal anesthesia. Coughing or vicious laryngospasm may occur during intubation. This, if persistent, will cause alarming cyanosis and cardiac embarrassment. This may be avoided by spraying the mouth and throat with 2 per cent pontocaine

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19. Welch, Henry; Putnam, L. E.; Randall, W. A., and Herwick, R. P.: Penicillin X: Successful Treatment of Gonorrhea with a Single Intramuscular Injection, *J. A. M. A.* **126**:1024 (Dec. 16) 1944. Orr, E. M.; Meads, M., and Finland, M.: Penicillin X: Comparison with Penicillin G with Respect to Sensitivity of Pathogenic Organisms and Serum Levels, *J. A. M. A.* **129**:257 (Sept. 22) 1945.

20. McDermott, Walsh; Bunn, P. A.; Benoit, Maria; Dubois, Rebeckah, and Haynes, Willette: Oral Penicillin, *Science* **101**:228 (March 2) 1945. Görgö, Paul; Vandegrift, H. N.; Elias, William; Colo, I. G.; Berry, J. M., and Pileter, J. L.: Administration of Penicillin by Mouth, *J. A. M. A.* **127**:639 (March 17) 1945. Finland, M.; Meads, M., and Orr, E. M.: Oral Penicillin, *ibid.* **129**:315 (Sept. 29) 1945.

21. MacGregor, A. B., and Long, D. A.: Use of Penicillin Pastilles in Oral Infections, *Brit. M. J.* **2**:666 (March 25) 1944.

22. Wesselhoef, Conrad, and Smith, E. C.: The Use of Sulfanilamide in Scarlet Fever, *New England J. Med.* **219**:947 (Dec. 15) 1938. French, Jane O.: The Sulfanilamide Treatment of Scarlet Fever, *J. Hyg.* **39**:581 (Sept.) 1939. Fox, M. J., and Gordon, N. F.: Treatment of Scarlet Fever, *Arch. Int. Med.* **74**:1 (July) 1944. Wesselhoef, Conrad, and Weinstein, Louis: Scarlet Fever, *New England J. Med.* **232**:509 (May 3) 1945.

or 4 per cent cocaine immediately on the patient's arrival in the operating room. The spraying is repeated before starting the intravenous administration of pentothal. The intubation is completed while the patient is in the usual position on the carriage. The patient is then transferred to the operating table in

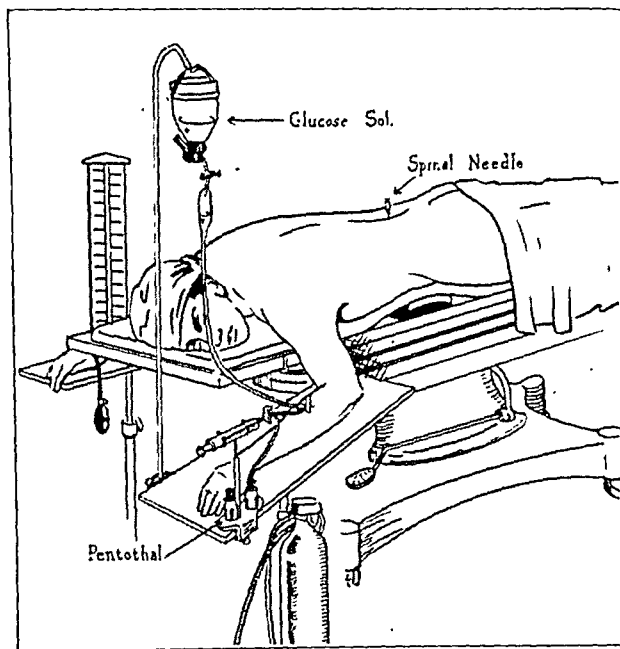


Fig. 1.—Anesthetic technic for patient in prone position

a position suitable for surgery. The anesthesia is then continued with pentothal supplemented with equal parts of nitrous oxide and oxygen.

For operations below the twelfth dorsal vertebra I prefer to use a combination of spinal analgesia, pentothal, nitrous oxide and oxygen. The spinal tap provides analgesia to the area, the pentothal counteracts the toxic effect of procaine while the equal parts of nitrous oxide and oxygen provide a good tidal exchange. This technic is illustrated by figure 1. The patient is placed in a prone position on the operating table over the kidney elevator to facilitate the surgical procedure. The venipuncture for pentothal anesthesia is performed in the most accessible vein before the spinal tap is made. The subarachnoid tap can be made quite easily in this position without turning the patient on his side.

I have used spinal analgesia following the injection of lipiodol without any harmful reaction. I have not attempted spinal analgesia on patients who have had pantopaque.

TECHNIC FOR THE ADMINISTRATION OF PENTOTHAL SODIUM ANESTHESIA

Preoperative Medication.—Sufficient and proper preoperative medication is absolutely essential for a smooth pentothal anesthesia. Opiates are used, with special emphasis placed on the necessity for atropine. These preoperative agents control the parasympathetic hyperactivity and inhibit salivary and mucous secretions, thereby greatly reducing the incidence of complications such as coughing, sneezing and laryngospasm. The preoperative medication should be administered hypodermically thirty to forty-five minutes before the anesthetic.

Administration of Pentothal.—The dose cannot be accurately judged by the patient's weight, age, sex or metabolic state. The dose must be adjusted to each individual patient. In order to obtain the proper depth of narcosis for the particular type of operation, one must resort to the intermittent technic in the administration of this agent. In our institutions this technic is made possible with the use of an inexpensive apparatus. This consists of a small stand that can be clamped on an arm board. The base supports a reservoir for the pentothal solution, and an adjustable bracket attached to the stand holds a syringe. A two way stopcock is attached to the syringe, to each outlet of which is connected ordinary Dakin tubing 8 inches in length. One tube leads to the reservoir and the other to the arm. To the latter is attached a glass observation tube and a needle (fig. 2). Such equipment makes it possible to refill the syringe when necessary and to continue the intermittent technic indefinitely.

The operating field is prepared and draped. Venipuncture is performed after the skin has been surgically prepared. Three cc. of a 4 per cent solution of pentothal sodium is injected during a period of ten seconds. Because relaxation comes on more slowly than unconsciousness, it is very important that a pause of five seconds follow the injection of each 2 or 3 cc. of the agent. An additional 2 or 3 cc. is injected at the same rate as in the beginning, followed by another pause of five seconds. This procedure is continued until the desired relaxation is obtained. The air passage must be patent. Oxygen must be administered with a gas machine, with a nasal adapter or with a whistle-tip rubber catheter inserted to a distance of 5 inches through the nose and into the pharynx.

It must be remembered that, since the agent is given intermittently, the effect following the administration of each successive dose is increased. The pause between injections is highly important because the accumulated effect of the drug may come on very suddenly. Evidence of recovery is an indication that an additional 2 cc. or more of the solution is necessary. Caution regarding the speed of injection cannot be overempha-

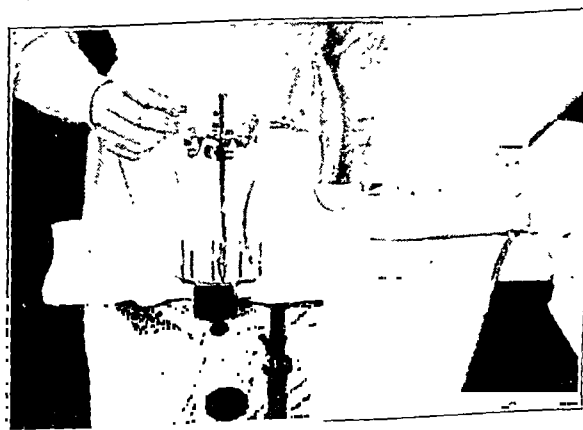


Fig. 2.—Apparatus used in the intermittent technic of administering pentothal sodium.

sized. As in all types of anesthesia, the body has no active mechanism of defense against overdosage.

Intravenous anesthesia should never be started unless there is oxygen available, either alone or on a gas machine.

In surgery requiring more than thirty minutes I have successfully used the so-called "double setup"

(fig. 3). The supplemental solution, either glucose, isotonic solution of sodium chloride, plasma or blood, is given continuously, while the pentothal is administered intermittently when needed. This has been made possible by the use of a "manifold." The supplemental solution passes continuously through one limb of the

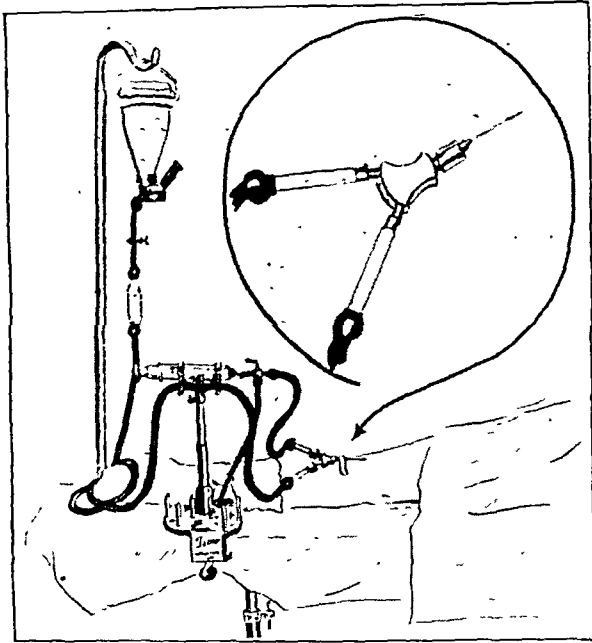


Fig. 3.—"Double setup" apparatus for administering the supplemental solution and pentothal.

manifold and the pentothal through the opposite limb. The male adapter of the manifold is attached to an intravenous needle. The supplemental solution flushes the needle, thereby preventing coagulation of the blood. The supplemental solution is desirable as a stimulant and as a restorative agent. This makes it possible to administer intravenous anesthesia in prolonged surgical procedures.

COMPLICATIONS AND THEIR MANAGEMENT

Complications with pentothal anesthesia are rare. However, some occur and should be handled without serious results. The most common is respiratory depression. The amplitude of the respiration rather than the rate is affected. It was found that oxygen administered through a mask or a catheter is frequently sufficient to stimulate the respiration. However, occasionally it is found necessary to administer nitrous oxide and nitrogen, in the meantime reducing the amount of pentothal. This technic has become quite popular with our staff.

Other complications which may occur either in deep or in light anesthesia are coughing, laryngospasm and hiccups. These may cause alarming cyanosis and perhaps cardiac embarrassment, if persistent. Such complications are undoubtedly due to parasympathetic hyperactivity. Should they occur under anesthesia, we aspirate the mucus or other material in the pharynx, deepen the anesthesia and immediately administer nitrous oxide and oxygen under pressure.

Trismus is another complication. This is undoubtedly a result of parasympathetic hyperactivity that can be controlled with atropine. Should this occur during anesthesia, a nasopharyngeal tube should be imme-

diately inserted and oxygen administered under pressure. Delay in this procedure may become serious.

Urticarial rash has appeared on three occasions in our series of cases. It occurred during the induction of the anesthetic and is an interpretation of idiosyncrasy of the patient to that drug. If pentobarbital sodium is given the night before operation, the patient will reveal this susceptibility and this type of anesthetic can be avoided. However, should the condition occur during anesthesia, the pentothal should be discontinued and 4 to 6 minims (0.25 to 0.37 cc.) of neosynephrine immediately administered intramuscularly. The anesthetic should then be continued with inhalation agents, preferably nitrous oxide or cyclopropane.

POSTANESTHETIC COMPLICATIONS AND THEIR MANAGEMENT

The most common postanesthetic complication is respiratory depression. For this reason all patients anesthetized with pentothal should have oxygen administered to them continuously after the operation until they have completely reacted. Furthermore, the entire nursing staff of all hospitals should be thoroughly trained in the proper management of patients receiving barbiturates. The nursing staff should be made to realize that the postoperative and postanesthetic care of patients is very important for uneventful recovery.

Postanesthetic opiates should be withheld, especially in the case of older patients, until the patient has completely reacted from the anesthetic.

If a patient has not reacted within two or three hours, it means that an overdosage of pentothal has been administered. In this case the patient should be treated in the following manner:

1. Keep the patient warm.
2. Administer oxygen continuously.
3. Aspirate the mucus from the throat frequently.
4. Give 3 cc. of metrazol intravenously. Repeat in five minutes if necessary. (Incidentally, I have found metrazol a very efficient denarcotizing agent as well as an excellent respiratory stimulant in sufficient dose.)
5. Give hypertonic sucrose intravenously for diuresis and dehydration of the brain and the lungs.
6. Give repeated small transfusions or plasma, which will be found to be helpful.

CONTRAINDICATIONS

Pentothal sodium should not be employed or recommended when there is a decided physiologic or mechanical interference with the respiratory function. Children under 7 or 8 years of age, unless very robust, are poor subjects. It is inadvisable to use this agent on patients suffering with respiratory embarrassment due to cardiac decompensation. I feel that pentothal is contraindicated in the presence of bronchiectasis, severe anemia and shock.

COMMENT

I have attempted to present a brief review on the technic of pentothal sodium for orthopedic surgery, with special attention to the complications and their management, and the contraindications. Pentothal is not a drug with which liberties may be taken. Special care should be exercised in maintaining an efficient airway at all times. A gas machine should always be on hand and ready for use should respiratory depression or other complications present themselves. Finally, the drug should be administered by a thoroughly trained anesthetist who is competent to deal with any situation that may occur during the administration of this popular but potent agent.

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ABSTRACT OF DISCUSSION

DR. AUSTIN LAMONT, Baltimore: As Dr. Thomas has suggested, orthopedic procedures in general offer no contraindications to the use of pentothal sodium for anesthesia. There is, in fact, ample justification for the opinion that the condition of the patient is the most important factor to be considered in choosing an anesthetic agent and method, assuming that the choice is to be made by an anesthetist skilled in the use of all the common agents and methods. Some will doubtless differ with Dr. Thomas in regard to certain of his statements, e. g. that the administration of pentothal is advisable to counteract the toxic effect of procaine injected into the subarachnoid space, that a pause of five seconds is a sufficient interval between repeated injections of 2 or 3 cc. of pentothal, that the complications of coughing, laryngospasm and hiccups should be treated partly by deepening the level of anesthesia which may already be deep, that hypertonic sucrose should be administered intravenously to patients who have received an overdose of pentothal and so on. Dr. Thomas wisely reiterates the warning that one cannot take liberties with pentothal without endangering the patient and that the safe and proper administration of pentothal requires a thoroughly trained anesthetist and efficient apparatus. When after an ordinary orthopedic or other superficial operation a patient does not react within two or three hours or indeed within fifteen or twenty minutes, it will usually be found that the pentothal was administered by an anesthetist relatively inexperienced with the agent. Most anesthetists in civilian practice who have occasion to use much pentothal have found that patients will rapidly recover from the narcosis if careful attention is paid to maintaining a level of anesthesia no deeper than necessary with as little pentothal as possible, an accomplishment which is facilitated by the continuous administration of nitrous oxide and oxygen in a ratio of about 60 to 40. It is interesting to speculate on Dr. Thomas's explanation of the fact that he has found oxygen to be a respiratory stimulant. For although there are excellent reasons for maintaining in the alveoli a high tension of oxygen throughout pentothal anesthesia, it is probable that oxygen could appear to act as a respiratory stimulant only when the respiratory center is so depressed by lack of oxygen that its integrity is dangerously impaired, a condition which should be strenuously avoided during anesthesia with pentothal or any other agent.

DR. JOHN H. HUTTON, Portland, Ore.: I don't know of any specialty to which the remark "each man to his own poison" is more applicable than to the field of anesthesiology. Some returning service anesthesiologists are enthusiastic about the use of pentothal sodium for a variety of operations in which they probably would not have employed it in civilian practice. Apparently the results obtained in the treatment of many serious battle casualties have justified their change of views. Dr. Thomas speaks of the use of tribromoethanol for children. Administration of this drug in the ward in basal doses, 80 to 90 mg. per kilogram of body weight, does much to offset psychic shock. In my experience supplemental administration of analgesic or light anesthetic mixtures of nitrous oxide-oxygen have resulted in adequate and smooth anesthesia. The method is further justified if fireproof conditions must prevail. In regard to orthopedic operation performed with the patient in the prone position, such as laminectomy or spinal fusion below the twelfth dorsal vertebra, in our service spinal anesthesia unsupplemented has become the method of choice. A mixture of 11 mg. of pontocaine and 55 mg. of procaine diluted to a total of 3 cc. with spinal fluid at the time of injection between the second and third lumbar vertebrae has proved satisfactory for the average patient. The injection is made with the patient lying on his right side. After the injection he is turned on his back for two minutes and then placed in the prone position, the table being kept level at all times. Supplemental anesthesia has only rarely been required for operations lasting less than two hours. Likewise a dose of 8 mg. of pontocaine and 40 mg. of procaine in the same dilution and site of injection has proved most satisfactory for the average patient requiring pin fixation or osteotomy of the hip. Dr. Thomas mentions the

use of neosynephrine. It is an excellent drug for use during operations under spinal anesthesia. I have employed 3 minims intramuscularly for hypotension which is not due to shock and have been pleased with the quick elevating and sustaining effect on the blood pressure along with an improvement in tone and slowing of the pulse. One factor has been mentioned about pentothal sodium anesthesia that deserves even further emphasis. That is the importance of adequate nursing care in the immediate postoperative period. Fatal hypoxemias have resulted from inattention. Such instances can be attributed to the stress of too little help, but nevertheless it is inexcusable. Complicated apparatus for the administration of pentothal sodium may in some instances militate against the use of that drug. Such apparatus requires cleaning and is more or less troublesome. Its use may have a direct bearing on the economic relationship between the anesthesiologist and the hospital administration.

DR. C. C. YOUNT, Pittsburgh: It has been my privilege to be associated with Dr. George J. Thomas in many hundreds of orthopedic operations since he was made chief anesthetist at St. Francis Hospital. The most important improvement brought about is the change from inhalation anesthesia to intravenous anesthesia, more particularly in those cases in which the supine position and a long operative period are required—such as extensive spine fusion of the combined hip-Albee type as in scoliosis and tuberculosis and more recently in partial laminectomy for pathologic conditions in the intervertebral disk region. In the latter group a more recent plan of combined intravenous and spinal analgesia has been very helpful both to the operator and to the patient. Laryngospasm has been less frequent, and supportive treatment may be more easily administered by the anesthetic team. Anociassociation is more complete and the incidence of shock is lower. In my early surgical career I was on the staff in a hospital where spinal analgesia was being used extensively, and for a time I felt that spinal analgesia offered the best method in all operations below the umbilicus except in children. I now feel that there is a limited field for spinal analgesia exclusively, but a larger field for combined spinal analgesia with pentothal or other intravenous anesthetic agents. I have found the use of intravenous anesthesia especially useful in manipulations in adults requiring a rather short period of anesthesia and in children the inhalation of vinethene. Dr. Thomas has not mentioned local anesthesia, but I still prefer it in many minor operative procedures in orthopedic surgery, such as ingrown toenails, ganglion of tendons, biopsy of exposed bone tumors, some exostoses of bone, and in minor operations involving the digits. I have noted in recent years that the administration of anesthesia has become very diversified and considerable experience is necessary in selecting the proper anesthesia. I feel that this decision should be made after a brief review of each case with the anesthetist. If the surgeon has confidence in his chief anesthetist and his team, little concern and little attention to this feature of the operation need be given by the surgeon. The important position of the anesthetist on the operating room team should be more generally recognized both by medical personnel and by the public.

DR. MAYFR S. DEROY, Pittsburgh: Intravenous anesthesia is used in a high percentage of cases in our orthopedic service. Its use is limited, however, to the discretion of the department of anesthesia, the judgment of the members of which is final, and whose consultation is expected in all cases. Combination with spinal or inhalation anesthesia is also a problem for that department. Pentothal is advantageous in short procedures, such as back manipulations and fracture reduction. The fact that many patients will request intravenous anesthesia from previous experience or from conversation with other patients emphasizes the ease of induction from the patients' point of view. With elimination of the stage of excitement or struggle there is less chance of loss of position of fracture fragments. The longer procedures, such as laminectomy, spine fusion and hip reconstruction, do well with combined spinal and intravenous anesthesia. The patient is placed in the desired position and then anesthesia is begun. We have had no difficulty in giving spinal anesthesia with the patient in the prone position but prefer to give the intravenous first, followed by the

spinal tap. Thus a minimal amount of pentothal is used and the patient has no recollection of the procedure. In comparing intravenous and inhalation anesthesia, we are impressed by the relative safety of pentothal. We have had no deaths in several thousand cases. We have had no fear of explosion from gases in using the electrocoagulation apparatus or the electric saw. Proper preoperative medication will minimize complications such as spasm of the larynx. Relaxation is rapid and complete. The lessened nausea and vomiting in these cases is advantageous when a body cast has been applied. We are impressed by the ease of administration of fluids, using the double setup, and take advantage of administering saline solution, glucose, plasma or even blood. The essential fact remains that our satisfactory use of intravenous anesthesia has been in hospitals which have anesthetists well trained in its use. It should be used only by experienced persons and when so given is of great value.

SICKLE CELL ANEMIA, "A GREAT MASQUERADER"

EASILY RECOGNIZABLE WITH ROUTINE USE OF
DIAGNOSTIC PARAMETER

TRAVIS WINSOR, M.D.

AND

GEORGE E. BURCH, M.D.

NEW ORLEANS

Like syphilis, sickle cell anemia may present many clinical syndromes.¹ Some of these are easily recognizable, while others may imitate many disease states such as rheumatic fever, tuberculosis, Hodgkin's disease and acute surgical diseases of the abdomen, only to mention a few, to an extent that the differential diagnosis is learned only after proper hematologic study. Like syphilis, the disease may be so subtle as not to enter the mind of the clinician. Because of the fact that sickle cell anemia is such a great imitator and because it may remain so subtle, it is necessary, again as in syphilis, to study the blood routinely for sickle cell anemia in all Negro patients. In the past routine studies have not been done, as preparations of blood for sickling have offered certain difficulties.² A simple, rapid and accurate (the diagnostic parameter) method, described elsewhere,³ offers itself for the routine study of all Negro patients for the existence of active sickle cell anemia. For the past twenty-four months this test has been applied routinely to all Negro patients entering a medical service of the Charity Hospital. As in the case of routine serologic examinations for syphilis, this has resulted in the unexpected discovery of many patients with sickle cell anemia as a primary or complicating disease. For example, a routine search for sickle cell anemia by means of the diagnostic parameter in 612 consecutive Negro patients admitted to this one medical service resulted in the finding of 27 cases (4.4 per cent) of active sickle cell anemia. This culminated in an early and correct diagnosis, though often unexpected, in many patients who ordinarily may have not been found to have this disease. Needless to say, many of these would have been erroneously treated and subjected to surgical procedures, well known to be dangerous and usually contraindicated and unnecessary in active sickle cell anemia.

From the Department of Medicine, Tulane University of Louisiana School of Medicine, and the Charity Hospital.

1. Wintrobe, M. M.: *Clinical Hematology*, Philadelphia, Lea & Febiger, 1942. Winsor and Burch.⁴

2. Diggs, L. W., and Pettit, V. P.: Comparison of Methods Used in Detection of Sickle Cell Trait, *J. Lab. & Clin. Med.* 25:1106-1111 (July) 1940.

3. Winsor, T., and Burch, G. E.: Diagnostic Physicochemical Blood Tests in Sickle Cell Anemia, *Am. J. M. Sc.* 207:152-160 (Feb.) 1944.

This report indicates the methods and results of the routine use of the diagnostic parameter in the management of Negro patients.

METHODS

Two methods may be employed in performing the test, one employing carbon dioxide (diagnostic parameter Δ_1) and the other venous stasis (diagnostic parameter Δ_2) to produce a retardation of the rate of erythrocyte sedimentation.⁴ These methods are again described briefly:

Tourniquet Technic (Δ_2).—A sphygmomanometer cuff is wrapped round the brachium and inflated to a pressure between systolic and diastolic and allowed to remain in place for approximately six minutes. Ten cc. of venous blood (the collection of dark blue blood indicates adequate stasis) is withdrawn and placed in a 10 cc. vial containing oxylate or citrate crystals as anticoagulant. A Wintrobe sedimentation rate tube⁵ is immediately filled, care being taken to prevent excessive loss of carbon dioxide, and the sedimentation rate determined. Approximately 3 cc. of the remaining blood is then transferred to a 50 cc. Ehrlenmeyer flask, which is rotated periodically at two minute intervals for fifteen minutes (adequate aeration or oxygenation is indicated by the bright red color) to facilitate the escape of carbon dioxide. A rate of sedimentation is then measured for the aerated sample. The diagnostic parameter Δ_2 is positive or indicative of sickle cell anemia when the difference between the sedimentation rates (uncorrected) of aerated and reduced blood

TABLE 1.—Effect of Anemia (Artificially Produced) on the Hematocrit Reading of Aerated Blood and of Blood Treated with High Concentrations of Carbon Dioxide

Group	Diagnostic Parameter Δ_1 (Min. per Hour)	Hematocrit per Cent (Aerated Blood)	$H_{CO_2} - H_A \times 100^*$	
			H_{CO_2}	H_A
Control.....	7.3	4.5	22.8	
	11.5	10.0	21.3	
	13.0	25.0	19.0	
	10.8	35.0	19.3	
	5.5	61.0	11.0	
	2.3	57.5	22.0	
	Mean 5.0	30.6	19.2	
Sickle cell anemia	89.3	6.0	41.3	
	83.5	10.0	5.3	
	74.5	16.0	9.0	
	54.8	26.0	65.0	
	43.5	34.0	95.0	
	37.0	40.0	4.0	
	Mean 61.4	20.5	60.0	

* Percentage increase in hematocrit of blood treated with carbon dioxide over blood treated by aeration.

H_{CO_2} = hematocrit of blood treated with carbon dioxide.

H_A = hematocrit of blood treated by aeration.

is greater than 20 mm. per hour. If the diagnostic parameter is between 0 and 20 mm. per hour the chances are more than 10,000 to 1 that the patient does not have sickle cell anemia. If greater than 20 mm. per hour the chances are 98 in 100 that the patient has sickle cell anemia.⁴

Carbon Dioxide Technic (Δ_1).—Between 5 and 10 cc. of venous blood is drawn without regard to the duration of the application of the tourniquet and placed in a vial containing an anticoagulant (oxylate or citrate

4. Winsor, T., and Burch, G. E.: Heart Disease in Patients with Sickle Cell Anemia, to be published.

5. Wintrobe, M. M., and Landsberg, J. W.: A Standardized Technique for the Blood Sedimentation Test, *Am. J. M. Sc.* 189:102-115 (Jan.) 1935.

crystals). Two or three cc. is transferred to a 50 cc. rubber stoppered Ehrlenmeyer flask into which fairly pure carbon dioxide is introduced or has previously been introduced. The flask is agitated at approximately two minute intervals for fifteen minutes or until the blood becomes dark blue. Two or 3 cc. of the original

and 65 mm. per hour); the average Δ_1 parameter for the 437 control patients was 5.5, the extremes being 0 to 24 mm. per hour, while the average for the 73 patients with sickle cell anemia was 53.5, the extremes being 29 to 77 mm. per hour. The definite grouping of individuals into those with large and those with small diagnostic parameters indicates the usefulness of the procedure as a diagnostic aid.

Chart 3 indicates the need for a high concentration of carbon dioxide in order to insure a satisfactory result for the parameter Δ_1 . At atmospheric pressure the percentage of carbon dioxide in the gaseous mixture employed to saturate the blood with carbon dioxide should exceed 95 per cent. In the performance of the parameter Δ_2 the use of a tourniquet for six minutes will give equally good results when carbon dioxide gas is not available. It can be seen from table 1 that the more severe the anemia the greater the tendency for the parameter to deviate from the normal. This was true whether or not the anemia was artificially produced by separating the erythrocytes and plasma and recombining them in various proportions, or the anemia of various degrees occurred naturally in patients. For example, in the instance of an artificially produced anemia the diagnostic parameter Δ_1 averaged 88.3 mm. per hour when the hematocrit averaged 6 per cent and 37 mm. per hour when the hematocrit averaged 40 per cent, remaining abnormally high in sickle cell anemia even in the presence of normal hematocrit readings.

Significant differences of diagnostic importance were also noted in the hematocrit determinations of the bloods treated with carbon dioxide and air in the patients with sickle cell anemia (table 2). In all of 10 patients with sickle cell anemia, adequate centrifugation of the sedimentation tubes after determining the

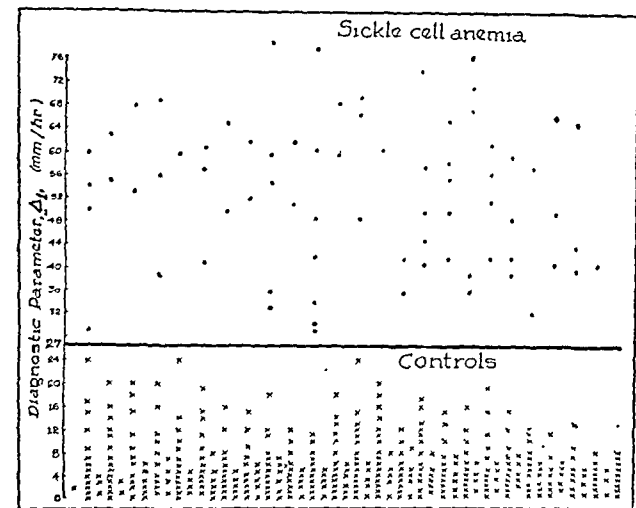


Chart 1.—Diagnostic parameters Δ_1 in 437 control individuals (normal subjects and patients with various diseases including anemias other than sickle cell anemia) and 73 patients with sickle cell anemia, showing the grouping about the parameter value of 20 mm. per hour.

sample (blood not treated with carbon dioxide) is placed in another open flask and aerated by intermittent agitation for about fifteen minutes or until the blood becomes bright red. Separate sedimentation rates are then set up using blood from each flask, the results being read in one hour. The parameter Δ_1 is positive or diagnostic of sickle cell anemia when the difference between the two rates is greater than 27 mm. per hour. The probable errors are as small as indicated for Δ_2 .

TABLE 2.—Change in Hematocrit Reading of Naturally Occurring Blood Treated with Carbon Dioxide as Compared with That Aerated

Group	Diagnostic Parameter Δ_1 (Mm. per Hour)	$H_{CO_2} - H_A \times 100^*$	
		H_A	
Control			
Mean.....	3.5	10.9	
Maximum.....	19.0	21.4	
Minimum.....	0.0	4.3	
Sickle cell anemia			
Mean.....	50.7	50.4	
Maximum.....	76.0	70.0	
Minimum.....	39.0	40.0	

* See legend of table 1 for interpretation.

RESULTS

The results obtained with the diagnostic parameters Δ_1 and Δ_2 are summarized in charts 1 and 2. In the study of 175 control persons with various disease states, including many types of anemia, and 34 patients with sickle cell anemia, the diagnostic parameter Δ_2 did not give a false response in a single instance (chart 2). In 437 control patients and 73 with sickle cell anemia the diagnostic parameter Δ_1 also did not give a false response in a single instance. Sicklemia, that is, the condition of sickling without active sickle cell anemia, is not included in these studies. The average Δ_2 parameter for the 175 control subjects was 5.3, the extremes being 1 and 18 mm., while the average for the 34 patients with sickle cell anemia was 41.4 (extremes 29

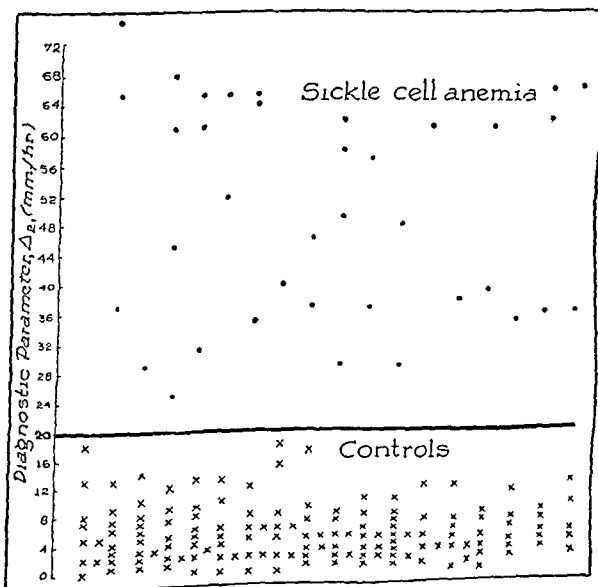


Chart 2.—Diagnostic parameters Δ_2 in 175 control individuals (normal subjects and patients with disease states including various types of anemias other than sickle cell anemia) and 34 patients with sickle cell anemia, showing the clearcut grouping of patients above and below a diagnostic parameter value of 20 mm. per hour.

diagnostic parameters (Δ_1) revealed a definite increase in the hematocrit reading of the blood treated with carbon dioxide over that treated with air; increase in the hematocrit reading averaged 50.4 per cent (extremes 40 and 70 per cent) following treatment with carbon dioxide. The diagnostic parameter Δ_1 in these patient-

averaged 50.7 mm. per hour (extremes 33 and 76 mm. per hour). Of a control group of 51 normal subjects and patients with other disease states, the average increase in hematocrit reading was only 10.9 per cent (extremes 4.3 and 21.4 per cent) following treatment with carbon dioxide. The diagnostic parameter in this

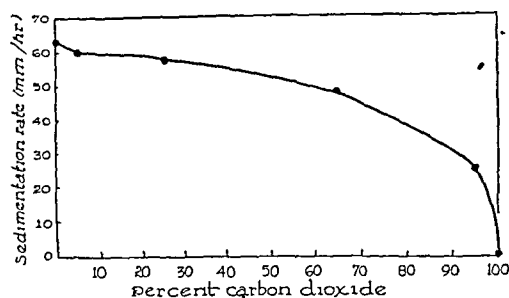


Chart 3.—Effect of the carbon dioxide concentration in air for fifteen minutes on the sedimentation rate of erythrocytes. The greatest effect is found in concentrations of 95 per cent or more.

group averaged 3.5 mm. per hour (extremes 0 and 19 mm. per hour). The difference was greater than 30 per cent in all of the bloods of the patients with sickle cell anemia, while none of the control subjects exceeded this value (chart 4). When an artificial anemia was produced (table 1) the mean increase in the hematocrit in patients with sickle cell anemia was 66 per cent (extremes 44.3 and 93 per cent) and in the control subjects the average increase was 19.2 per cent (extremes 11 and 22.8 per cent).

COMMENT

From the data presented it is obvious that the diagnostic parameters Δ_1 or Δ_2 are reliable tests for active sickle cell anemia. Since they are simple and require no special apparatus or materials, they can be used routinely. The results are obtained in not longer than an hour, usually in much less time, which increases their serviceability. This is particularly true when dealing with acute clinical problems which may be confused with sickle cell anemia. It has been the practice to check all results obtained with the diagnostic parameter by the less rapid sickling preparation. In no instance has the diagnostic parameter given false responses. Since sedimentation rates are so frequently employed with patients with acute or obscure clinical states, it is simple to modify this to include the diagnostic parameter when dealing with Negro patients. This entails little additional effort. Since the influences of carbon dioxide are so definite on the erythrocyte size as reflected in the hematocrit, the results of the diagnostic parameter can be checked by centrifuging the sedimentation tubes following the sedimentation determinations. The diagnostic value of the hematocrit is illustrated by chart 4.

Needless to say because of these accentuated changes in hematocrit readings occurring as the result of exposure of blood to carbon dioxide, grave errors in the determination of the mean corpuscular volume and in the mean corpuscular hemoglobin concentration may result in hematologic studies in sickle cell anemia. Errors in the determinations of the mean corpuscular hemoglobin do not occur, as the calculations do not involve the use of the hematocrit readings. Furthermore, because of the striking differences in the sedimentation rates and hematocrit readings following the application of a tourniquet, it is obvious that usual clinical correction charts for anemia⁶ apply only under special circumstances. The chart certainly does not apply for the

hematocrit readings and sedimentation rates of carbon dioxide treated blood. The process of collecting blood usually involves venous stasis with a certain amount of treatment with carbon dioxide from the tissues, so that the usual correction charts for anemia are unreliable in sickle cell anemia. These and other phenomena have been discussed in detail elsewhere.⁶

As stated previously, since the introduction of the diagnostic parameter as a routine clinical test on all Negro patients in a medical service at the Charity Hospital there resulted the unexpected discovery of 27 patients with active sickle cell anemia in 612 consecutive patients examined. Clinical value of this information is obvious. Needless to say many clinical difficulties, errors in diagnosis and unnecessary special laboratory procedures were avoided by the early and correct diagnostic evaluation of these patients. In many of the patients the disease was either subtle or strongly suggested clinical syndromes other than sickle cell anemia. The routine use of the diagnostic parameter in examining the Negro patients proved to simplify the clinical study in a manner similar to that in which routine serologic examinations for syphilis simplified the management of the nonsyphilitic and the syphilitic patients.

It might be well to add that during the course of the hematocrit and diagnostic parameter determinations the presence or absence of mild jaundice and often leukocytosis, both objective signs of diagnostic value in active sickle cell anemia, were revealed. In this series of 72 patients with active sickle cell anemia jaundice and leukocytosis were invariably present. McGavack⁷ found jaundice of the sclera in all but 10 of 214 patients with sickle cell anemia, indicating further the diagnostic importance of jaundice in active sickle cell anemia.

SUMMARY

Since sickle cell anemia is a great masquerader, a search for this disease should be made routinely in all Negro patients in a manner similar to that in which

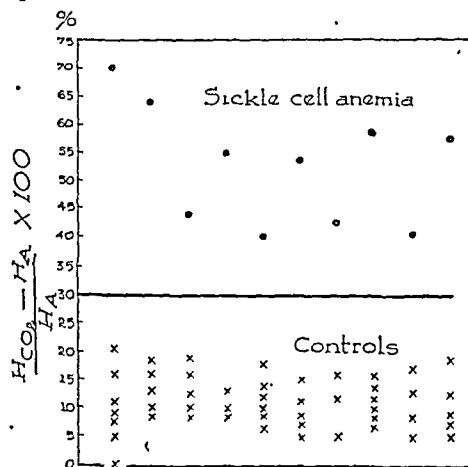


Chart 4.—Scatter graph of the percentage increase in the hematocrit of blood treated with carbon dioxide over that treated with air in 51 control normal subjects and patients with other disease states and 10 patients with sickle cell anemia. A difference greater than 30 per cent may be indicative of sickle cell anemia.

routine serologic examinations for syphilis are made. Since the institution of the routine use of the diagnostic parameter in a medical service at Charity Hospital.

⁶ Winsor, T., and Burch, G. E.: Hemolysis, Agglutinins, and the Duration of Life of Erythrocytes in Patients with Sickle Cell Anemia, to be published.

⁷ McGavack, T. H., and Nussbaum, C. C.: Skin Manifestations of Sickle Cell Anemia, *Urol. & Cutan. Rev.* 46:194-200 (March) 1942.

27 cases of active sickle cell anemia have been discovered among 612 consecutive Negro patients tested. This has resulted in an early, though often unexpected, correct diagnosis in many patients who may have been erroneously managed in a rapidly moving hospital medical service.

The change in hematocrit reading following the treatment of sickle cell anemic blood with carbon dioxide is of diagnostic value. In no instance did the diagnostic parameter give a false response. This is particularly important in view of the fact that it is a rapid procedure and therefore of great value in the management of acute medical and surgical problems among Negro patients.

THE MANAGEMENT OF CHRONIC MALARIA BETWEEN ATTACKS

WITH SPECIAL REFERENCE TO THE EFFECT OF
NICOTINIC ACID ON MALARIAL HEADACHE

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(MC), U.S.N.R.

Since its earliest description in ancient times, malaria has been the subject of repeated writings by a host of authors and scientific investigators. For the past sixty years, following the discovery of Laveran in 1884 of the malarial plasmodium in the blood of malarial patients, a tremendous impetus has been added to the interest and scientific investigation of this disease. Eleven years (1895) after Laveran's epochal demonstration Sir Ronald Ross discovered the mosquito vector in the transmission of malaria to human beings and thus established the second important milestone in our advance against this age-old scourge. These two outstanding contributions served to stimulate further study of this disease, and at the present time malaria is being widely investigated by many epidemiologists, military physicians and public health workers.

Because of the episodic nature of chronic malaria and the long asymptomatic intervals which characterize the course of the disease all previous studies, as far as could be ascertained by review of the literature, have been concerned entirely with the problems of prevention, diagnosis and treatment of the acute attacks per se, practically nothing having been written concerning the management of malarial patients between attacks. The reason for this is quite understandable. Prior to World War II there was little need to observe civilian patients with chronic malaria during the interval phases of their disease, as such persons were almost invariably able to carry on a normal ambulatory existence. However, with the outbreak of the war and its almost immediate spread to malaria infested areas, many thousands of military personnel were stricken and subsequently returned to the United States with this disease. We are now faced with an unprecedented situation as the result of this tremendous influx. The social and medical aspects of malaria are already the concern of many physicians, and knowledge of some of its common clinical features has become a matter of general clinical importance. It is my purpose in this paper, therefore, to acquaint physicians, both civilian and military, with some of the more common and occasionally distressing features occurring in the interval phase of this disease.

"POSTMALARIAL ASTHENIA"

It would be in order at this point to comment, for the purpose of better understanding and correct nosology, on the use of the term "postmalarial asthenia." Unfortunately this antiquated expression, once applied to victims of malaria in the tropics and characterized by cachexia, anemia and other ailments, is today still used by many medical officers and often serves as a cover-all for psychosomatic and other disturbances not necessarily of malarial origin. The debilitation which was so commonly observed among tropical natives and the malnutrition which was present concomitantly with malaria among the poor white inhabitants throughout the South who were afflicted with this disease traditionally accounts for the origin of the term "postmalarial asthenia." One must bear in mind that present day "war malaria" constitutes a different problem from that seen during peacetime. Almost all military personnel who have acquired malaria have done so as a result of having been exposed to this infection in a combat area. These men developed malaria while under unusual stress, and the element of fatigue, mental and physical, played an important role in rendering them susceptible to any infection. In many instances the initial malarial attack developed while the patient was in actual combat against the enemy, the chills and fever having been endured simultaneously with battle weariness, hunger, intense fear and exposure to wet and cold. Following removal from the field, with the usual supportive measures and the use of antimalarial drugs, recovery from the febrile attack usually occurred within a few days. After the acute episode, such patients were found to exhibit many symptoms, among which were included easy fatigability, irritability, weight loss, headache, backache and disturbed sleep. This syndrome was often diagnosed or interpreted as "postmalarial asthenia." Medical officers who have had occasion to care for malarial patients shortly after their removal from combat are well aware that generalized weakness constitutes a major complaint among such persons at that time. There is no doubt that malaria contributed to the development of this so-called state of "asthenia." Accurate appraisal of the total situation, however, will usually reveal that such symptoms of weakness or nervousness are attributable to the physical and psychologic stress of combat and are in many instances a form of combat or operational fatigue. This does not mean that frequent malarial relapses may not in themselves bring about weight loss, fatigability and other somatic disturbances which are included in the asthenic syndrome mentioned, but it is to be emphasized that, despite the vicissitudes of combat, these men, thanks to suppressive action of atabrine, though much fatigued, suffered relatively few or no malarial attacks during this period. It was after removal from combat and following the discontinuance of suppressive therapy that increase in such relapses occurred.

It is interesting to note that in a large group of malarial patients, after their return to the United States and following a period of at least three months of reconditioning, the incidence of "asthenia" was found to be negligible despite the fact that many of these men, no longer under any suppressive treatment, were known to have had malaria for as long as three years, and a good number of them had a history of as many as twenty-five to thirty acute attacks. One notes in such a group that when the symptoms of operational fatigue or other concurrent involvement, especially tropical infections such as amebiasis and hookworm,

are recognized and specifically treated, these patients recover most gratifyingly despite the systemic persistence of their malaria. It would appear, then, that "postmalarial asthenia" is a term which might well be abandoned, as it provides only semantic confusion and serves no useful nosologic function.

MALARIAL HEADACHE

There are, on the other hand, certain distressing symptoms which occur so often in persons with chronic malaria that one must indict the malarial parasite itself in some way as being specifically responsible for their occurrence. Most prevalent among these is headache. It is safe to state that between 15 and 20 per cent of military personnel with a history of chronic malaria are subject to periodic bouts of mild to severe headache. This headache is in itself one of the most disturbing features of the interval phase of this disease, and its alleviation has presented itself as a real challenge to those concerned with the "reconditioning" of malarial patients. Even among persons whose past history revealed complete freedom from any type of headache and who exhibited stable and well integrated personalities, the intractable headaches which they suffered since the onset of their malaria had in many cases caused secondary symptoms including mild depression, seclusiveness, irritability and other seemingly neurotic traits.

It might be well at this point to digress for a moment and briefly describe the special features of so-called malarial headaches and differentiate them from the other forms of headache which are encountered in any group of persons. The character of the headache, its location, periodicity, severity and other characteristic features, were carefully elicited in order to differentiate it from headache of nonmalarial origin. It was especially important not to include in this study persons who presented psychoneurotic features or other psychosomatic disturbances. The type of headache seen in patients with chronic malaria was usually bifrontal in distribution, almost always mild to moderate in severity, never intense or "bursting" in character and rarely described as being over the vertex or referred to as a "weight" or "pressure," as is frequently done by patients with headaches due to increased nervous tension. The typical malarial headache, if one may refer to it as such, is never hemicranial nor are there any neurologic prodromes, visual disturbances, nausea or vomiting, such as is seen in migrainous persons. The headache most often is present on arising in the morning and usually improves after the patient has been up for a few hours. A rather constant feature of patients with malarial headaches is the intolerance to any form of physical exertion, especially if it is performed in a hot sun. This almost invariably brings about a severe headache.

These persons were not benefited by the usual headache remedies. Salicylates, bromides, barbiturates and other analgesic or sedative drugs were, in our experience, found to be of no value in relieving this type of headache. Ergotamine tartrate administered hypodermically (0.5 cc.) to 15 selected patients, and amphetamine sulfate given orally (5 to 10 mg. doses) to 25 patients were found to be of no benefit and in several cases caused increase in the severity of the headache as the result of their vasoconstrictive action. It was soon realized that no drug or remedy was available which might effectively be used for the relief of malarial headache. Moreover, until better understanding of the altered physiology underlying such headache

was forthcoming, any therapeutic approach to this problem necessarily had to remain along empirical lines. This is true not only in regard to headaches of malarial origin but also of the whole problem of headaches in general, the physiologic mechanism for which is as yet but slightly understood despite the brilliant experimental researches of Wolff¹ and others on the mechanism of migraine and histamine headache.

It has been repeatedly observed that in cerebral malaria pronounced hyperemia of the brain is present and stasis of blood in cerebral capillaries occurs. Autopsy studies of patients dying of this form of malignant malaria reveal characteristic clogging of cerebral capillaries by parasite laden erythrocytes. The tendency for parasitized red blood cells to become "sticky" (isoagglutination) has been established by those who have studied this form of malaria.² Whether such a state of capillary stasis occurs in patients with benign tertian malaria has not been shown, but if such were the case, the headaches might plausibly be explained on the basis of capillary stasis causing slowing of the rate of cerebral blood flow with resultant venular congestion, focal cerebral edema and anoxia. With this rationalization as the possible mechanism of malarial headaches, it occurred to me that an innocuous drug such as nicotinic acid, known to produce vasodilatation and to enhance cerebral blood flow,³ might be clinically effective in relieving such a headache.

On the basis of this assumption, a group of patients whose only complaint was frequent and severe headache, attributed by the examiner to malaria, was selected for special study. Each of these patients was admitted and complete physical and neurologic examinations, including x-ray of the skull, were done. Careful manometric estimation of the cerebrospinal fluid pressure and complete laboratory studies of the spinal fluid were done in all the cases in this group. No significant changes were noted. To each of these patients an initial dose of 100 mg. of nicotinic acid was given orally. Within ten or fifteen minutes after ingestion of this medication the usual flush and cutaneous erythema was noted. The patient was observed for about an hour after taking the drug. Examination of thick blood smears, taken just before and thirty minutes after the administration of the nicotinic acid, failed to reveal the presence of parasites in the peripheral blood. Simultaneously with the development of the characteristic feeling of warmth or "glow" and shortly after the appearance of appreciable erythema of the face, chest and trunk which occurred in all the men who were given the drug, moderate to complete relief of the headache was noted in some persons about thirty to forty-five minutes after taking the drug. Duration of relief of headache varied with each individual but as a rule lasted for several days. In those cases in which the headache recurred every day and was present on arising in the morning, 50 to 100 mg. of nicotinic acid taken after breakfast usually gave relief for the entire day. In general, the drug was administered in accordance

1. Wolff, H. G., and Sutherland, A. M.: Experimental Studies on Headache: Observations on Mechanism of Headache in Migraine, Hypertension and Fever Therapy, *Tr. Am. Neurol. A.* 64: 103-106, 1938. Wolff, H. G.: Migraine, *Proc. Interst. Postgrad. M. A. North America* (1939), 1940, pp. 165-169.

2. Knisely, M. H.; Stratman-Thomas, W. K., and Eliot, T. S.: Observations on Circulating Blood in the Small Vessels of Internal Organs in Living Macacus Rhesus Infected with Malarial Parasites, *Anat. Rec.*, 1941, supp. 90, p. 79; *Trop. Dis. Bull.* 40: 584, 1943; *Capillary Circulation in the Malarial Infected Monkey: A Cinematographic Study*, *abstr.*, *J. A. M. A.* 116: 2430-2431 (May 24) 1941.

3. Aring, C. D.; Ryder, H. W.; Roseman, E.; Rosenbaum, M., and Ferris, E. H., Jr.: Effect of Nicotinic Acid and Related Substances on the Intracranial Blood Flow of Man, *Arch. Neurol. & Psychiat.* 46: 642 (Oct.) 1941.

with the individual needs as determined by the periodicity or frequency of the headache and was prescribed accordingly. Of 25 patients so treated, 10 stated that the headache had disappeared entirely, 8 noted moderate relief and 7 were not helped at all.

SUMMARY

1. A large number of military personnel with chronic malaria are now in evidence. These men, though ambulatory and in most instances capable of normal activity, are still in need of continued observation and proper care.

2. The term "postmalarial asthenia" should be abandoned, as careful evaluation and clinical appraisal invariably betray the nonmalarial nature of this condition.

3. Malarial headache is the most common and most disturbing symptom during the interval between attacks.

4. Secondary neurotic-like phenomena such as mild mental depression, seclusiveness, lack of interest and intolerance to physical exertion often develop following prolonged persistence of malarial headache.

5. In a group of 25 selected patients with malarial headache, nicotinic acid given orally in 100 mg. doses was found to relieve the headache in 10 cases, caused moderate improvement in 7 and was of no benefit in 8.

6. In view of the pharmacologic safety of this drug and the absence of any other effective therapy, it is felt that it should be given a therapeutic try.

OXIDIZED CELLULOSE—ABSORBABLE GAUZE

(CELLULOSIC ACID)

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AND

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Dry gauze used to stanch bleeding in the open wound has, in the experience of most surgeons, been both life saving and hazardous. Hemorrhage has been checked which might otherwise have proved fatal, but the subsequent removal of the gauze which stuck to the raw surfaces often resulted in fresh bleeding, and the danger of infection was great. Packing frequently obscured infection in the depths of the wound and blocked drainage. In fact, so great is the risk of promoting infection by this means that strong directives against the use of tight packing in wounds have been issued by both American and British military surgeons.

Some time ago in the search for a nonirritating absorbable membrane for use in plastic repair of special structures such as tendons in a sheath, a material was proposed by Dr. Hans T. Clarke, professor of biochemistry at the College of Physicians and Surgeons, and was kindly released by Dr. W. O. Kenyon of the Eastman Kodak Research Laboratories for our study in advance of his publication.¹ This was oxidized cellulose,

From the Department of Surgery, Columbia University College of Physicians and Surgeons.

The gauze and cotton were supplied by Eastman Kodak Research Laboratories, Rochester, N. Y. (U. S. Pat. No. 2,232,990), through Parke, Davis & Company, Detroit.

The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and Columbia University.

1. Yackel, E. C., and Kenyon, W. O.: Oxidation of Cellulose by Nitrogen Dioxide, *J. Am. Chem. Soc.* **64**: 121-127 (Jan.) 1942. Unruh, C. C., and Kenyon, W. O.: Investigation of the Properties of Cellulose Oxidized by Nitrogen Dioxide, *ibid.* **64**: 127-131 (Jan.) 1942.

now known as cellulosic acid, and consisted of cellulose in the form of cotton, gauze and paper which had been subjected to oxidation by nitrogen dioxide. As a result of this, carboxyl groups—COOH—were formed which rendered the material soluble in dilute alkali. By altering the oxidation time the carboxyl content could be altered, and this percentage determined the chemical and physical properties of the material treated.

The preliminary experimental work to determine the reaction of animal tissues to the material was reported by Frantz.² The problem of sterilization had not at that time been solved. The product was used experimentally after boiling for three minutes in distilled water, as it does not withstand the autoclave.

Simultaneously Putnam³ reported the first clinical trials of oxidized cotton pledgets used, as unoxidized pledgets had previously been used in neurosurgery as patties soaked in thrombin solution. The oxidized cotton patties did not require removal.

All of this study to date had concerned the use of very small amounts of the material, and work is still in progress on the development of absorbable protective membranes. The handling of larger quantities of gauze, however, in freely bleeding lacerations of various tissues has been investigated. Originally we thought of it only as a packing to stanch bleeding which, happily, and contrary to the usage of ordinary gauze, could be left in closed cavities or, if desired, removed from open contaminated or infected wounds without sticking and causing fresh hemorrhage. This also implied that no blocking of drainage could take place with this material.

Accordingly studies were undertaken in animals, and to our surprise it became evident that the oxidized gauze was not just a packing like ordinary gauze but had a specific hemostatic action in its own right. This made the addition of a clotting agent, thrombin, superfluous even for cotton patties. Moreover, there was reason to believe that the acidity of the material might inactivate the enzyme to a certain extent. Needless to say, only oozing can be controlled by the simple application of the gauze. For brisker bleeding some pressure

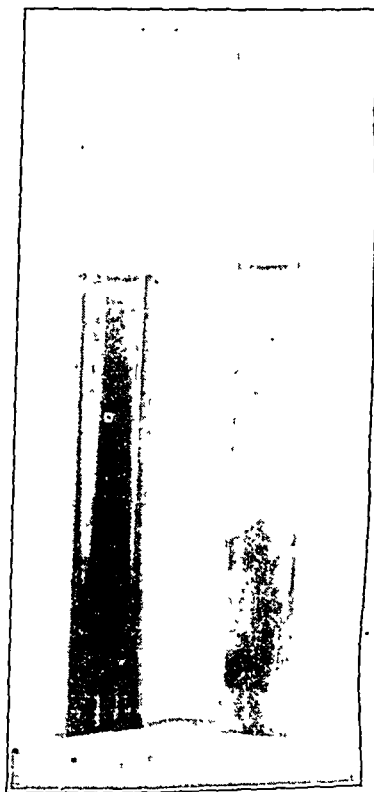


Fig. 1.—At right, oxidized gauze in dilute laked blood; at left, control without gauze. The control was bright red. The gauze was brown and the supernatant fluid almost colorless. (*Ann. Surg.*, August 1944)

2. Frantz, V. K.: Absorbable Cotton, Paper and Gauze (Oxidized Cellulose), *Ann. Surg.* **118**: 116-126 (July) 1943.
3. Putnam, T. J.: The Use of Thrombin on Soluble Cellulose in Neurosurgery: Preliminary Note, *Ann. Surg.* **118**: 127-129 (July) 1943.

must be used, possibly reinforced with tamponade or with retaining sutures.

This specific hemostatic property seems to depend on the formation of coagula apparently consisting of salts of cellulosic acid and hemoglobin. It can be illustrated in vitro by immersing a strip of gauze in a



Fig 2—Section showing oxidized gauze in experimental wound of dog's kidney. In this and the following illustrations the wounds were made as nearly as possible comparable. This shows a section forty-eight hours after packing. The gauze is closely applied to the wound surface (Ann Surg, August 1944)

dilute solution of laked blood (fig. 1). If ordinary gauze is used there is no obvious change. Oxidized gauze so placed immediately begins to draw out all color from the solution and appears after some hours as a brown fibrillar mass in clear, colorless fluid.

In a bleeding wound the gauze swells, turns black and sticks (fig. 2). This adherence is about as strong as the true clot formed when fibrin foam⁴ or gelatin sponge⁵ is used as a carrier for thrombin for surface bleeding. In a deep laceration, or cavity, as for instance a laceration of liver or kidney, or the prostatic bed

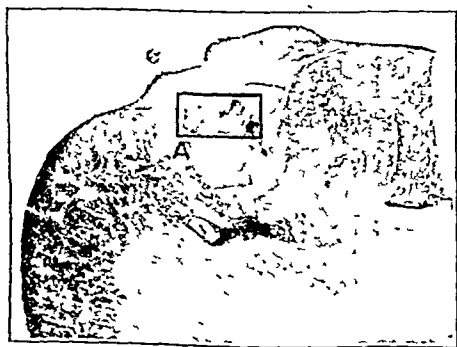


Fig 3—Three weeks after packing. Remnants of gauze are seen in the marked box. The rest of the pale zone in the cortex is composed of large mononuclear phagocytes (see figure 6). There is fibrous reparative tissue at A.

after suprapubic prostatectomy, dry, oxidized gauze is easily handled and no delay is necessary to prepare fresh sterile thrombin solution. Moreover, in such lacer-

ations experimentally, the gauze used wet has been less effective than dry, even if the wetting has been in thrombin solution.

The experimental work (figs. 2-6) which led to clinical use of the material and the first clinical trials of gauze were reported by us in August 1944.⁶ The clinical use was made possible when the gauze was available sterile, in double glassine envelopes, prepared by Parke, Davis & Company. The material had been used in only 17 clinical cases at that time. In a more recent publication,⁷ 115 clinical trials were reported. Cases to date are shown in the accompanying table.

In the original tests for possible irritating qualities and for absorbability in various animal tissue, where implants were made in relatively avascular beds, such as peritoneum, joint cavities and subcutaneous tissue, there was frequently no blood combined with the gauze. Considerable variation in absorption time was noted, and it was not realized at first that this was in part a matter of blood in the sponge. A simple test using rats was devised for testing many absorbable materials.⁸ When the implants of sample lots of gauze were made without impregnation with blood, it was noted that these small implants, 1 cm square, eight ply, were sometimes entirely absorbed in the subcutaneous tissue of the back as early as the fourth day.

The animals as a rule were killed on the seventh day in order to allow for the development of any possible infection, but some were examined at an earlier time after operation. This rapidity of absorption of the material was not duplicated in the experiments in hemostasis, and accordingly, in 9 rats, implants were made after first soaking the gauze in blood obtained by aspiration of the heart.

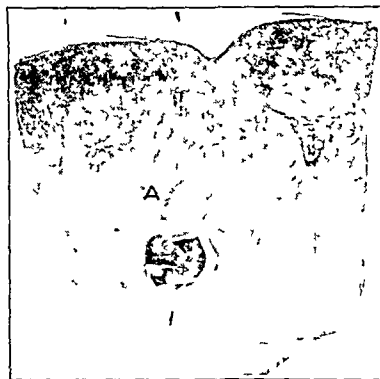


Fig 4—Eight weeks after packing. There is no gauze present. The defect is chiefly filled with a minimum of fibrous tissue still containing renal tubules and glomeruli. The bulk of fibrous tissue present is at A, where it surrounds a pale zone of phagocytes. The cavity in the depths is one of the calices into which a small mass of granulation tissue projects and which contains some blood clot.

They were killed postoperatively at 1, 2, 4, 7, 11, 13, 20, 24 and 30 days respectively. There was progressive decrease in the size of the implant, but even at 24 days there was still a small residual brown mass. At 30 days it was not present. Microscopically these tiny residua show a broad zone of phagocytes and a few remnants of cellulose not invaded by fibrous tissue. Also there were no significant gross or microscopic evidences of inflammation at any time. The findings were comparable in this respect to those noted after implantation of the dry material.

The only untoward effect, apparently, when the material is introduced into the tissues, is in bone. The acidity of the gauze is considered the probable cause of delay in the formation of the early callus in clean experimental fractures and defects. Ultimately, however, repair does take place, and there is, of course,

⁴ Ingraham, F. D. and Bailey, O. T. The Use of Products Prepared from Human Fibrinogen and Human Thrombin in Neurosurgery. *J. Neurosurg.* 1:23-30 (Jan.) 1944, footnote 12.

⁵ Latté, R. U. Personal Communication to the authors, cited by Frantz.

⁶ Frantz, V. K., Clarke, H. T., and Lattes, R. Hemostasis with Absorbable Gauze. *Ann Surg.* 120:181-199 (Aug.) 1944.

⁷ Frantz, V. K. New Methods of Hemostasis. *S. Clin North America* 25:338-349 (April) 1945.

⁸ Lattes, R., and Frantz, V. K. Absorbable Sponge Tests. *Ann Surg.* 121:894 (June) 1945.

no significant delay when, in the open lacerated compound fracture, hemostasis is secured by this means and the gauze is removed in the course of one to three days. Some retardation of epithelization has also been observed, and oxidized gauze is not recommended for a surface dressing of open wounds, except for hemostasis, to be removed when it has served this purpose. In this connection it is well to place it so that it does not overlap the skin edges, where it will stick like dry glue in contrast to its jelly-like character against moist tissue. It is this property of becoming gelatinous in the tissue fluids which allows it to be removed from the open wound without starting fresh bleeding and which also is insurance against any possibility of blocking drainage.

Other clinical reports of the use of oxidized cellulose are those of Cronkite, Deaver and Lozner⁹ and Uihlein and his associates¹⁰ at the Mayo Clinic. In the majority of the cases in these two reports absorbable cotton was used not dry but as a carrier of thrombin. Further trial in general surgery and neurosurgery is reported by

Other absorbable materials are also in the stage of clinical investigation. These we have discussed in greater detail elsewhere.⁷ The most widely publicized is human fibrin foam, which must be used in conjunction with thrombin. The reader is referred to THE JOURNAL article¹² for references to the work initiated

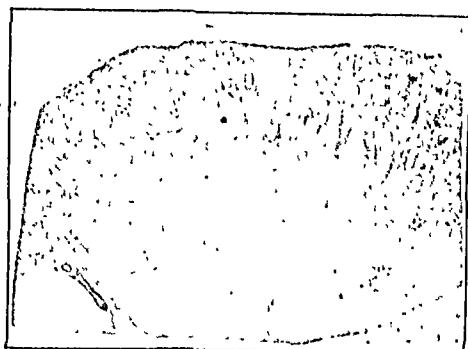


Fig. 5.—Fifteen weeks after packing. The narrow V shaped shadow is fibrous tissue in which there are renal tubules and glomeruli but no gauze and no characteristic phagocytes.

in the Department of Physical Chemistry of the Harvard Medical School. Gelatin sponge ("Absorbable Sponge") is also used with thrombin. These two absorbable materials and absorbable gauze and cotton (cellulosic acid) have now been recommended by the Committee on Surgery of the Office of Scientific Research and Development for use by the Army and Navy. It is hoped that clinical trial of all three materials will be undertaken by many investigators to determine as soon as possible the fields of usefulness.

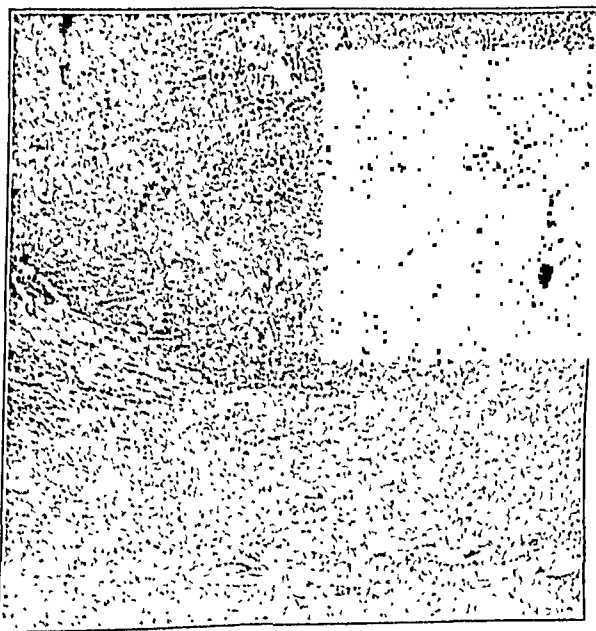


Fig. 6.—Appearance under higher power four and a half weeks after packing, showing a broad zone of typical phagocytes immediately adjacent to kidney parenchyma. No gauze is seen. (Ann. Surg., August 1944.)

COMMENT

A brief review of the experimental and clinical investigation of absorbable gauze and absorbable cotton has been presented. The materials have been found to be

9. Cronkite, E. P.; Deaver, J. M., and Lozner, E. L.: Experiences with Use of Thrombin With and Without Soluble Cellulose for Local Hemostasis. *War Med.* 5:80-82 (Feb.) 1944.

10. Uihlein, A.; Clagett, O. T., and Osterberg, A. E.: The Use of Oxidized Cellulose for Hemostasis in Surgical Procedures: Preliminary Report, Proc. Staff Meet., Mayo Clin. 20:29-32 (Jan. 24) 1945.

11. Uihlein, A.; Clagett, O. T.; Osterberg, A. E., and Bennett, W. A.: Absorbable Oxidized Cellulose with Thrombin as a Hemostatic Agent in Surgical Procedures, *Surg., Gynec. & Obst.* 80:470-472 (May) 1945.

12. Osterberg, A. E.: Personal communication to the authors.

12. Ingraham, F. D., and Bailey, O. T.: Clinical Use of Products of Human Plasma Fractionation. III. The Use of Products of Fibrinogen and Thrombin Surgery, *J. A. M. A.* 126:680-685 (Nov. 17) 1944.

hemostatic in their own right when used dry, to be nonirritating and to be absorbed in varying lengths of time depending on the amount used, the tissue bed and the amount of blood. They are proposed for general and special surgical use with the reiterated warning that, although nonirritating and absorbable, they do constitute, until in solution, particulate foreign bodies. The surgical implications of this need no emphasis.

630 West 168th Street.

Clinical Notes, Suggestions and New Instruments

CORD TRANSFUSION IN THE MANAGEMENT OF A PREMATURELY DELIVERED INFANT WITH ERYTHROBLASTOSIS FETALIS

CLIFFORD H. HARVILLE, M.D., WARSAW, N. Y.

The basic role of the Rh factor in the pathogenesis of erythroblastosis fetalis is now well established. Concerning the prevention and treatment of this condition, however, such unanimity of opinion is lacking. All authorities agree that, for an infant born alive with manifestations of erythroblastosis, the treatment is prompt transfusion with compatible Rh negative blood. If irreversible changes are not already present, this is life saving, and such reduction in mortality as has to the present been effected is attributable largely to this therapy.

With the hope of further reducing the high toll still exacted by this disease, premature termination of pregnancy has been advocated in order to limit the period of intrauterine hemolysis. The principal division of opinion that exists in relation to the therapy of erythroblastosis is concerned with the advisability of this procedure. Potter,¹ Javert² and other investigators who have contributed extensively to the literature of the subject have expressed the opinion that early delivery in these cases is rarely justified except for maternal indication. The position is taken that pregnancy cannot be terminated sufficiently early for the fetus to escape hemolytic disease and that the added handicap of prematurity more than offsets any advantage to be gained by shortening the period of intrauterine hemolysis. Proponents of early delivery believe, however, that a few weeks of prematurity entail much less hazard for the fetus than an equal period of continuing exposure to the isoantibodies accumulating from the mother's blood. It is felt too that this is the only therapy at present available which gives promise of salvaging a further percentage of these infants.

Final evaluation of this therapeutic procedure, which must await reports of a larger experience in its use, will no doubt be largely conditioned by our success in dealing with the hazard of prematurity, admittedly somewhat increased in the presence of hemolytic disease of the fetus. Careful attention to the principles of premature care in the management of these infants is manifestly essential. Too great a degree of prematurity is certainly not desirable, and pregnancy should probably be continued to approximately four weeks of term. Experience indicates that this is sufficiently early to insure the recovery of a considerable number of children who would not survive if pregnancy should be continued to full term. These infants, needless to say, should be delivered only into the most favorable environment. The more drastic methods of inducing labor are probably best avoided, and if simple medical induction fails it is felt that cesarean section merits consideration. Analgesia and general anesthesia are interdicted.

A neglected procedure which I believe to be of the greatest value in the management of these prematurely delivered infants

is the use of the umbilical vein for the initial blood transfusion. This is a technically simple procedure which involves minimum handling of the infant and obviates the traumatization incident to venipuncture, factors of vital importance in this critical initial period of premature management. The faulty oxygenation and tendency to cyanosis characteristic of the premature infant is accentuated in the presence of hemolytic disease. Anoxemia results not only from the reduction in the number of red blood cells but also from the preponderance of macrocytes. These cells are less efficient carriers of oxygen than are normocytes, a characteristic also of erythroblasts. The immediate need in these infants is to combat this critical anemic anoxia. This is accomplished most promptly by the immediate transfusion of blood through the umbilical vein. Prothrombin, frequently deficient in erythroblastotic infants, is probably more promptly supplied in this way than by the vitamin K preparations also given routinely to these infants as well as to the mothers prior to delivery.

The simplicity of this method and the promptness of blood administration it assures commend it also for the initial transfusion of the full term infant suspected of having erythroblastosis. It might well prove life saving in the occasional infant such as the one mentioned by Wiener,³ who he states would have died had blood not been given within fifteen minutes of its birth.

A survey of the literature on erythroblastosis, which includes a number of papers detailing transfusion methods, has yielded no mention of the umbilical vein having been used for giving blood to infants with this disease. Its use, however, was found to have been suggested by Mayes⁴ in a paper dealing with routine cord transfusion in premature and immature infants, in which he states that, "if hemorrhagic disease or erythroblastosis is suspected, cord transfusions may be of benefit."

The following case report illustrates the successful use of cord transfusion in conjunction with early delivery in the management of erythroblastosis fetalis.

REPORT OF CASE

Mrs. G. M., white, aged 30, quintipara, sextigravida, consulted me on Nov. 17, 1944. From the menstrual history, corroborated by uterine mensuration, it was estimated she would be at term April 5, 1945. She gave the following obstetric history: Her first three pregnancies resulted in the delivery of normal children who are all living and well. The fourth child became deeply jaundiced shortly after birth, the jaundice persisting for about ten days. This child survived and is also well. Her fifth pregnancy resulted in the delivery, March 24, 1943, of a full-term jaundiced infant who died on the fourth day. The findings at necropsy were those of severe hemolytic disease of the newborn with pronounced selective jaundice of the basal ganglions of the brain (kernicterus).

Blood studies showed this woman to be type AB Rh negative. Serologic tests for syphilis were negative. The husband was type O Rh positive and each of the four surviving children was found to be Rh positive, indicating the father to be homozygous with respect to the Rh factor. On Feb. 7, 1945 anti-Rh agglutinins were demonstrated in the patient's blood in low titer. With this obstetric history and the virtual certainty that the fetus in this pregnancy was Rh positive, premature delivery seemed to us to offer this infant the best, probably the only, chance for survival.

On March 6, 1945, thirty days before estimated term, with the infant in apparently good condition, medical induction of labor was attempted, without resort to rupture of the membranes or other surgical methods. This failing, on March 8 a cesarean section was performed under local procaine anesthesia by Dr. Henry S. Martin. The umbilical cord was clamped immediately after delivery to exclude the blood from the placental circulation, and 60 cc. of blood from a type O Rh negative donor were given the infant through the umbilical vein.

From the Obstetrical Service, Wyoming County Community Hospital.
1. Potter, E. L.: The Rh Factor in Obstetrics, *M. Clin. North America* 28: 254 (Jan.) 1944.

2. Javert, C. T.: Further Studies on Erythroblastosis Neonatorum of Obstetric Significance, *Am. J. Obst. & Gynec.* 43: 421 (June) 1942.

3. Wiener, A. S.: The Rh Factor in Therapy (symposium), *New York State J. Med.* 45: 302 (Feb. 1) 1945.

4. Mayes, H. W.: Cord Transfusions in Newborn Infants, *Am. J. Obst. & Gynec.* 48: 36 (July) 1944.

Studies of blood aspirated from the cord vein revealed a hemoglobin content of 8 Gm. per hundred cubic centimeters and a red blood cell count of 2,690,000, with a preponderance of macrocytes and pronounced polychromatophilia. There were but 7 erythroblasts reported per hundred leukocytes. The icterus index was 100. The infant's blood type was subsequently found to be O Rh positive.

The baby, a girl, breathed spontaneously. Its general condition, except for a rather pronounced pallor, seemed good. Clinical icterus was doubtfully present at birth but was definite when checked three hours later. The jaundice gradually deepened, reaching its maximum intensity about thirty hours after birth and then was essentially unchanged through the fifth day of life, after which it gradually lessened.

On the second day (March 9) examination of the peripheral blood showed a hemoglobin of 9.6 Gm. and 6 erythroblasts per hundred white blood cells. Failure of these cells to increase after birth as they have been observed to do in untreated cases when initially low in number was quite possibly attributable to the initial blood transfusion. A second transfusion of 90 cc. of whole blood from an O Rh negative donor was given at this time through an incision in the greater saphenous vein, the scalp veins being of unusually small caliber. Following this the red cell count was 5,700,000 and the hemoglobin content 17.24 Gm., these levels being maintained through the second week of life. During the third week there was a gradual lowering of these values, so that prior to the infant's discharge from the hospital on March 28 the red cell count was 3,110,000 and the hemoglobin 10 Gm. On April 2 the baby was seen for a checkup, and although her excellent weight gain had been continued and her general condition was good, she had again developed a definite pallor. A blood check showed an erythrocyte count of 2,900,000 and a hemoglobin of 8.2 Gm. There were no pathologic cells. She was given 100 cc. of whole O Rh negative blood with a return to normal red cell and hemoglobin values, and with the administration of iron these have continued at optimal levels to the present. Now at 4½ months the baby's development has been in all respects normal, and her weight is that of an infant of the same age born at term.

Anti-Rh agglutinins were not demonstrated in the mother's blood ten days after delivery with the usual technic. Facilities for testing for the presence of inhibitor or blocking antibodies were not then available.

COMMENT

The evidence in this case seemed to justify the belief that this infant would have little chance of survival if pregnancy was continued to full term. The fatal erythroblastosis with kernicterus manifested by the previous infant indicated that there was already in that pregnancy an extreme degree of sensitization of this mother. Experience has established that the intensity of maternal immunization increases in each succeeding pregnancy in which the fetus is Rh positive, resulting inevitably in progressively more severe manifestations of erythroblastosis in successive infants. The evidence that the father was homozygous with respect to the Rh factor, indicated that the infant possessed this factor.

The extent of the hemolysis present in this fetus four weeks before term, as evidenced by the degree of anemia and the high icterus index, would appear to confirm the belief that this infant would almost certainly not have survived had pregnancy been continued to full term.

SUMMARY

The case reported lends support to the thesis that in carefully selected cases of erythroblastosis fetalis early delivery is a rational therapeutic procedure.

Cord transfusion, hitherto neglected in these cases, is an important adjuvant procedure in the management of the prematurely delivered erythroblastotic infant. It is the method of choice for the initial transfusion also of the full-term infant suspected of having this disease.

88 North Main Street.

FAILURE OF CHOLINE CHLORIDE TO AUGMENT ANEMIA IN CIRRHOSIS OF THE LIVER

JANET WATSON, M.D., AND W. B. CASTLE, M.D., BOSTON

The report by Davis¹ of the production of hyperchromic anemia in dogs by the administration of choline chloride is of considerable interest in view of the increasing use of this substance in the treatment of liver disease in man.² Cartwright and Wintrobe³ recently gave choline chloride to 3 men over a period of ninety days without any hematologic effect. However, since none of their patients was suffering from hepatic disease, it seems worth while to report briefly a hematologic study of the effect of choline in a patient with cirrhosis of the liver and macrocytic anemia.

Davis¹ produced anemia in dogs by giving choline chloride orally in a dose of 10 mg. per kilogram of body weight daily for at least twenty-five days. When a definite anemia was established, the dosage was successively increased to 20 and 30 mg. per kilogram. There was said to be a reduction of 30 to 43 per cent in the red blood cell count within seventy to ninety days. Our patient, T. T., aged 60, had had an extensive

Negative Effect of Choline Chloride Administration on Blood Values of Patient with Macrocytic Anemia and Cirrhosis of the Liver

Hospital Day	Red Blood Cells, Millions per Cu. Mm.	Hemoglobin, %	Hematocrit, Cc. per 100 Cc.	Mean Corpuscular Volume, Cubic Microns	Mean Corpuscular Hemoglobin Concentration, %	Mean Corpuscular Hemoglobin Micrograms	Reticulocytes, %	White Blood Cells, per Cu. Mm.	Icterus Index, Units
0	2.31	50	23.8	103.0	32.8	33.8	0.8	5,200	4
10	2.21	46	23.3	105.4	24.5	25.8	2.0	4,200	4
20	2.53	50	27.2	107.5	23.3	30.4	3.1	6,200	4
30	2.66	50	29.0	110.2	26.6	29.3	2.0	5,300	4
40	2.62	53	28.0	110.3	23.4	31.3	0.8	7,700	4
50	.....	.....	.....	.....	.....	.....	.....	.....	.....
60*	3.12	66	32.5	95.0	31.7	30.1	2.0	8,100	5
70	3.33	68	32.8	98.5	32.6	32.1	2.8	6,600	5
80	3.30	67	34.9	103.9	29.8	31.0	2.2	7,100	5
90†	3.79	74	36.2	95.5	32.0	30.6	0.8	11,000	5
100	4.11	77	37.6	91.5	31.9	29.1	0.8	7,000	5
110	3.94	74	37.3	94.7	30.8	29.2	0.4	6,000	4
120	3.90	71	37.5	96.2	29.6	28.5	1.0	10,400	4
130	4.27	79	40.0	93.7	30.8	28.5	0.9	9,700	4

* Daily intravenous administration of 1.0 Gm. of choline chloride begun.

† Daily oral administration of 1.0 Gm. of choline chloride begun.

intake of alcohol for many years and showed evidence of pronounced hepatic insufficiency in all the liver function tests. He was given choline chloride⁴ in a 5 per cent aqueous solution in a dose of 17 mg. per kilogram of body weight daily for seventy days, by intravenous administration for the first thirty days and by oral administration for the remaining forty days. This represented a total daily dose of 1 Gm. During the period of choline therapy the patient was maintained on the regular hospital diet and received no other medication. The hematologic data are shown in the accompanying table. It will be seen that on admission the patient had a macrocytic anemia. This was slowly improving before choline therapy was begun and continued to improve during therapy.

Dr. Watson is Commonwealth Fund Fellow.

Miss Ruth Pearson performed the blood examinations. From the Thorndike Memorial Laboratory, Second and Fourth Medical Services (Harvard), Boston City Hospital, and the Department of Medicine, Harvard Medical School.

1. Davis, J. E.: Experimental Production of Hyperchromic Anemia in Dogs Which Is Responsive to Anti-Perniciosis Anemia Treatment, *Am. J. Physiol.* 142: 402 (Oct.) 1944.

2. Brown, G. O., and Muehler, R. O.: Treatment of Hepatic Cirrhosis with Choline Chloride and Diet Low in Fat and Cholesterol, *J. A. M. A.* 118: 1403 (April 18) 1942. Russakoff, A. H., and Blumberg, H.: Choline as Adjuvant to Dietary Therapy of Cirrhosis of Liver, *Ann. Int. Med.* 21: 548 (Nov.) 1944.

3. Cartwright, G. E., and Wintrobe, M. M.: Effect of the Administration of Choline Chloride on the Hematologic Picture in Human Beings, *J. A. M. A.* 127: 911 (April 7) 1945.

4. Supplied by Dr. George Hazel, Abbott Laboratories, North Chicago, Ill.

CONCLUSION

Choline chloride, in a dose of 17 mg. per kilogram of body weight given daily for seventy days to a patient with cirrhosis of the liver and macrocytic anemia, did not intensify the anemia. In fact, during this period the red blood cell and hemoglobin values progressively increased.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. HOWARD A. CARTER, *Secretary.*

**SPERTI IRRADIATION LAMP MODEL
HI-41 ACCEPTABLE**

Manufacturer: Sperti Corporation, Norwood Station, Cincinnati 12, Ohio.

The Sperti Irradiation Lamp Model HI-41 is a combination ultraviolet and infra-red generator. Its radiation characteristics are such that it qualifies as a sun lamp. The firm claims that it produces an erythema in 3 minutes at a distance of 18 inches. The lamp will do therapeutically anything that can be expected from an acceptable sun lamp.

The Sperti Irradiation Lamp was investigated in a laboratory acceptable to the Council. The lamp was operated according to the manufacturer's instructions enclosed in the package. It was connected to a regulated 120 volt alternating current supply to insure constant operating conditions. An alternating current ammeter was placed in the supply line, and a voltmeter across the lamp terminals. When tested, the current supplied to the lamp was 3.7 amperes at 113 volts.

The Council investigator reported:

1. Spectral Radiative Measurements.

The relative intensities measured with a quartz-fluorite achromatic spectroradiometer, corrected for absorption by the lenses, etc., are given in the accompanying table.

Wavelengths— Angstroms	Relative Intensity
3132	113.0
3024	32.0
2967	11.0
2894	2.0
2804	2.3
2654	0.5
2537	0.0
Total	160.8

The amount of radiation of wavelengths 2,800 angstroms and shorter is only about 0.3 per cent of the total.

2. The total ultraviolet radiation of wavelengths 3132 angstroms and shorter measured along the central axis, at a distance of 2 feet (61 centimeters) from the edge of the reflector (64 centimeters from the front edge of the burner), when operated on 115 volts (alternating current) was 133 microwatts per square centimeter, which is 35 to 40 per cent above the minimum requirement. This ultraviolet generator, therefore, complies with the Council's requirements in spectral and total output of ultraviolet for acceptability as a sun lamp.

3. The total radiation of all wavelengths, measured along the central axis, at a distance of 2 feet from the reflector, was 12,700 microwatts per square centimeter. Of this amount, only 6.7 per cent was transmitted by a cell of water 1 centimeter in thickness, showing that most of the infra-red radiation is of wave lengths longer than 1.2 microns, which is not deeply penetrating. While the total output of infra-red is appreciable, it is only about $\frac{1}{20}$ to $\frac{1}{40}$ that of an infra-red generator designed for that purpose.

The Sperti Irradiation Lamp operates on either alternating or direct current. Its height, extended, is 5 feet 6 inches and collapsed is 3 feet 11 inches. Its weight packed is 29 pounds and unpacked, 23 pounds. The finish is chrome and hard-baked cream enamel. The stated operating wattage is given as 475. The Council test shows 734 watts.

The Council on Physical Medicine voted to accept the Sperti Irradiation Lamp, Model HI-41 for inclusion in its list of accepted devices.

Council on Pharmacy and Chemistry**REPORT OF THE COUNCIL**

The following statement has been authorized for publication by the Council. AUSTIN SMITH, M.D., *Secretary.*

DRUGS SOLD IN FOREIGN COUNTRIES

From time to time the Council office has been requested to supply information on drugs which are made available in other countries. Many of these inquiries arise because of treatment undergone by patients from other countries, because of drugs used by physicians who have resided in other countries but who are now in the United States and because of publicity given by the press to drugs developed or sponsored elsewhere. Drug and pharmaceutical manufacturers and distributors in the United States are invited to supply information concerning the names, actions and uses, American equivalents and other useful data so that the files of the Council office may be as complete as possible and so the best information service can be provided to its inquirers. At the same time readers of this column are invited to make use of the information in the Council files by directing inquiries to the Secretary of the Council, in care of the American Medical Association, 535 North Dearborn Street, Chicago 10.

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

VITAMIN B COMPLEX SYRUP.—A syrup prepared from a concentrated extract of dried brewers' yeast and an extract of corn processed with *Clostridium acetobutylicum*, with inverted cane sugar 40 per cent w/v and natural flavoring.

Actions and Uses.—Proposed for prophylaxis and treatment of conditions arising from deficiency of the vitamin B complex. VI-CO PRODUCTS CO., CHICAGO

Vitamin B Complex Syrup: Each 5 cc. contains thiamine hydrochloride 1.5 mg., riboflavin 1.0 mg., pyridoxine hydrochloride 0.5 mg. and nicotinic acid 7.0 mg., with other vitamin B complex factors as extracted from 10 Gm. of dried brewers' yeast.

U. S. Patent 2,193,876 (March 19, 1940; expires 1957).

THEOPHYLLINE ETHYLENEDIAMINE (See New and Nonofficial Remedies, 1944, p. 373).

The following dosage forms have been accepted:

BARLOW-MANEY LABORATORIES, INC., CEDAR RAPIDS, IOWA

Tablets Aminophylline: 0.1 Gm. and 0.2 Gm.

AMERICAN PHARMACEUTICAL CO., INC., NEW YORK

Tablets Aminophylline: 0.2 Gm. enteric coated with shellac.

CALCIUM LEVULINATE (See New and Nonofficial Remedies, 1944, p. 457).

The following dosage forms have been accepted:

CHEMO PURO MANUFACTURING CORP., LONG ISLAND CITY, N. Y.

Calcium Levulinate: 30 Gm. and 480 Gm. bottles.

CARROLL DUNHAM SMITH PHARMACAL CO., ORANGE, N. J.

Calcium Levulinate Injection 10% W/V: 1 Gm. in 10 cc.

BISMUTH SUBSALICYLATE (See New and Nonofficial Remedies, 1944, p. 236).

The following dosage form has been accepted:

THE SMITH-DORSEY CO., LINCOLN, NEB.

Bismuth Subsalicylate in Oil with Chlorobutanol: 50 cc. vials. A suspension of bismuth subsalicylate in peanut oil containing in each cubic centimeter bismuth subsalicylate 0.13 Gm. with 3 per cent chlorobutanol added.

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SATURDAY, NOVEMBER 17, 1945

THE HILL-BURTON HOSPITAL CONSTRUCTION BILL

The Senate Committee on Education and Labor, after what has obviously been extended and thoughtful consideration, has reported with approval a revised measure (S. 191) for federal aid in the construction of hospitals and related facilities. Several important amendments are suggested by the committee.

The reported bill provides for a five year program and authorizes annual appropriations of \$75,000,000 for each of the five fiscal years, plus unappropriated and unexpended balances, as compared with \$100,000,000 in the original bill for the first year and an unlimited authorization thereafter. In the original bill an appropriation of \$5,000,000 was authorized for state administrative expenses. The committee has eliminated this authorization, taking the position that the states should be able to handle this feature without federal aid. Federal funds to be made available by this legislation will be allotted according to a new formula devised by the committee which eliminates administrative discretion in its application.

Misgivings had been felt by many because the term "public health center" was defined in the bill as a publicly owned facility for the provision of public health services and medical care. The reported bill eliminates the italicized words, thus limiting the functions of such centers to the provision of public health services, the scope of which will be determined by state law.

As introduced, the bill required a state plan to embody a hospital construction program which would be in accord with "standards" prescribed by the Surgeon General with the approval of the Federal Advisory Council. The Senate committee concluded that the independence of the states in carrying out their plans will be better preserved if the Congress specifies general requirements and limits the federal government's regulatory control to those requirements. These general requirements are set forth specifically in the amended bill. They relate in the main to the number and general

manner of distribution of hospitals to be constructed under the program. The scope of the federal regulatory powers as contemplated by the requirements is entirely consistent, in the opinion of the committee, with effective federal control of appropriated moneys.

The designation of the council to collaborate with the Surgeon General, on the federal level, in carrying out the purpose of the bill has been changed from the Federal Advisory Council to the Federal Hospital Council for the reason that its functions, the committee points out, are not merely advisory. Provision is made for the appointment by the council of special advisory and technical committees. The membership of the council has been modified to include three members to represent consumers of hospital services, who must be persons familiar with the need of hospital services in urban or rural areas.

During the course of the hearings on the bill, representatives of the Association suggested the advisability of including a provision, similar to the one contained in the Lanham act, to make it clear that federal control could not be exercised over the operation and maintenance of hospitals constructed under the program. Such a proscription is contained in the reported bill. To prevent the transfer of a hospital constructed under the program to a transferee not approved by the state agency, a provision has been added authorizing the United States to recover the federal percentage of the value of the hospital at the time of the transfer. A similar authority may be exercised if a nonprofit hospital ceases to remain in that category.

A reservation to the favorable report of the committee was filed by its chairman, Senator James E. Murray of Montana, a co-sponsor of the Wagner-Murray-Dingell bill. Senator Murray expressed the belief that the hospital bill includes a "bad and dangerous administrative arrangement" in that it assigns certain essential administrative functions to the Federal Hospital Council; that the bill devolves too much authority on the states with respect to the use of federal funds, "a dangerous and unwise proposal," and that federal regulatory powers should be extended over the operation and maintenance of hospitals. He emphasizes a conviction that S. 191 has only limited value and urges the enactment of legislation to solve the problem of paying for hospital and medical costs along the lines which Senator Wagner and he have worked out in S. 1050, "by broadening and strengthening the social security program."

The reported bill presents ample evidence of the desire of the Senate committee to offer a constructive program to be administered under proper safeguards. In the words of the committee report, "seldom has a subject received more careful consideration by any committee of the Congress than has the pending measure."

DO PIGEONS SPREAD VIRUS PNEUMONIA?

Extensive surveys of pigeon lofts and sampling of the pigeon populations throughout the country have shown that from 20 to 40 per cent of pigeons have in their serums antibodies which indicate that they have been at some time infected with the virus of ornithosis. Necropsies made on the bodies of pigeons and inoculation tests on mice with emulsions of the tissues of the spleen and of the kidney have shown that a variable percentage of pigeons may actually have living virus in the body. However, only a relatively small percentage of all pigeons are "open" carriers—that is to say, give off the virus in such form that they might infect other pigeons or human beings. Studies made by the George Williams Hooper Foundation of the University of California show that discharge of virus from the bowel of the pigeon is quite irregular and that many pigeons are "closed" carriers and noninfectious although serum positive.

When pigeons are crowded in lofts or cages, the latent infections may temporarily relapse into clinical infections and there may be massive shedding of the virus. The droppings in such cages remain infectious. When the material becomes dry, it is readily dispersed into the air by the fluttering birds. Therefore lofts in backyards or receiving pens for racing pigeons are much more likely to be foci for dissemination of infectious material than are the wild pigeons in city parks and around public buildings.

Danger to the human being comes from intimate contact with pigeons such as occurs when cleaning dirty lofts or when standing close to cages in which racing pigeons are received. Evidence indicates also that the picking up of sick pigeons in the park, bringing the birds home or killing and cleaning pigeons for food has likewise been followed by human infection with ornithosis. Apparently, then, it is possible for a human being to become infected from inhaling virus in dusts of streets or parks where flocks of pigeons congregate and their droppings soil the surroundings. However, actual studies seem to show only an exceedingly few cases that may have developed in this manner.

At present authorities in epidemiology are convinced that the risk is not significant and that the sensational, irresponsible, speculative publicity that has recently appeared in newspapers in some of our large cities is not warranted by any scientifically established evidence. Moreover, studies have been made which indicate that other species of birds are likewise carriers and shedders of viruses like those of psittacosis. Apparently these birds have not come under the suspicion of public health authorities.

In recent years great numbers of cases of atypical pneumonia due to virus have been reported all over the United States. Many of these cases have occurred in areas like camps and barracks where contact with

pigeons is minimal, if it occurred at all. Despite the demonstration that some cases of human virus pneumonia have seemed to follow association with pigeons, the authorities do not believe that this represents the main method of spread of the disease. Apparently direct contact between human beings is the method by which most of the cases occur.

The proposal has been made that all the wild pigeons of large cities be eliminated. Until the statistics in any city present conclusive evidence that human infections due to exposure to pigeons in the streets and parks are fairly common, such action is not warranted. What assurance can there be that pigeons will not reinvade cities after the original pigeons are removed? Obviously backyard pigeon lofts and pens containing racing pigeons and homing pigeons are not affected by indiscriminate destruction of wild pigeons. Furthermore, removal of the pigeons will not in any way minimize the possibility that parrakeets, love birds, canaries and other birds and fowl act as reservoirs for viruses.

MENKIN'S ANTINECROSIN (ECLAMPسيا ANTITOXIN)

In 1940 Smith¹ of the Fearing Research Laboratory, Brookline, Mass., demonstrated that the normal human menstrual discharge is highly toxic for rats and rabbits. Subsequent studies² have shown that its toxicity varies in direct proportion to the amount of endometrial debris. From this Smith concludes that the toxin is probably a specific autolytic product of the endometrial cells. The toxin is apparently a euglobulin. This euglobulin is highly antigenic for rabbits, giving rise to an antitoxic serum that will protect rats from multi-lethal doses of menstrual discharge.

While this work was in progress, Menkin³ of Harvard Medical School reported the presence of a similar toxic euglobulin in canine inflammatory exudate. For this toxin he proposed the name "necrosin." He found subsequently that necrosin could be fractionated by differential solubility methods. One of the fractions is a nontoxic pyrogenic factor, for which he proposed the name "pyrexin." He found that pyrexin is absent from normal blood serum but is present in appreciable amounts in the serums and urines of animals with a concomitant inflammation.

Parallel tests⁴ between human menstrual toxin and canine necrosin have shown that within the limits of the experimental error the two substances are qualitatively and quantitatively identical. On subcutaneous injection both will produce death within forty-eight

1. Smith, O. W., and Smith, G. V.: *Proc. Soc. Exper. Biol. & Med.* 44: 169 (May) 1940.

2. Smith, O. W., and Smith, G. V.: *Proc. Soc. Exper. Biol. & Med.* 55: 285 (April) 1944.

3. Menkin, Vally: *Chemical Basis of Injury in Inflammation*, *Arch. Path.* 36: 269 (Sept.) 1943; *Chemical Basis of Fever with Inflammation*, *Ibid.* 39: 28 (Jan.) 1945.

4. Smith, O. W., and Smith, G. V.: *Proc. Soc. Exper. Biol. & Med.* 59: 116, 1945.

hours in 19-21 day old rats. The pathologic findings in rats receiving lethal doses of the two euglobulins are identical. Given intravenously to rabbits both are pyrogenic, small amounts causing a 2.5 to 5 degree F. rise in rectal temperature by the end of three hours. Both will liquefy the human fibrin clot. Both are antigenic for rabbits, inducing the production of antitoxins and precipitins and giving 100 per cent identical cross reactions. Smith considers this conclusive evidence of the complete identity of his human menstrual toxin and Menkin's canine necrosin.

Assuming this identity, Menkin's necrosin antiserum (precipitin) could be used for the detection of menstrual toxin in human tissues and body fluids. Such an anticanine serum presumably would not give interfering cross reactions with normal human tissue products. Using this antiserum, Smith⁵ found that factors identical with menstrual toxin not only are present in the circulating blood of menstruating women but also are present in even higher titer in the bloods of preeclampsia and eclampsia patients. The substance, however, is absent from the serums of normal nonmenstruating and normally pregnant women.

Since Menkin's necrosin antitoxin will prolong the survival time of rats after multilethal doses of menstrual toxin, its possible therapeutic value in human eclampsia is now under investigation. A similar protective substance has been found in the pseudoglobulin fraction of human menstrual discharge and in the venous serums of menstruating and eclampsia patients. This human antitoxic pseudoglobulin is being further investigated as a possible therapeutic agent.

Current Comment

WAR MEDICINE BECOMES OCCUPATIONAL MEDICINE

By action of the Board of Trustees of the American Medical Association the periodical known as *War Medicine*, published under the joint auspices of the American Medical Association and the Division of Medical Sciences of the National Research Council, will be discontinued with the issue for December 1945. In its place the Board of Trustees has authorized the publication of the periodical to be known as *Occupational Medicine*, designed to serve advancement in the field of prevention and treatment of disease conditions occurring to workers in every type of occupation and industry. An editorial board is in process of selection and will be announced just as soon as the Board of Trustees has taken action and those invited to serve have accepted the appointments. *Occupational Medicine* will not be the specific organ of any association or group, although it will have the advantage of material developed through the Council on Industrial Health of the American Med-

ical Association. Several members of the Council on Industrial Health have already consented to become members of the editorial board of the new periodical. In general makeup the new publication will include, as do the other specialistic periodicals published by the Association, original contributions, even of monographic scope, covering causes, diagnosis, pathology, prevention, treatment and indeed every phase of disease related to occupation. Included also will be new investigations concerned with work of personnel departments in industry, such as the effects of emotions, boredom and other psychologic problems. The utilization of mass technics in roentgenology for the detection of tuberculosis, the preplacement examinations designed to adapt the job to the physiologic condition of the worker, the causes of absenteeism and the use of occupation for rehabilitation of the handicapped are further examples of subjects to be considered. *Occupational Medicine* will also include abstracts of the important current medical literature related to occupational health and disease, also occasional editorials, book reviews, news and selected collective reviews on topics of current interest.

FOREIGN MARKETS AND AMERICAN DRUGS

A manual entitled "Medicinal Products—United States Equivalents and Alternatives," recently released by the Department of Commerce, presents in Spanish and Portuguese the American equivalents and alternatives for German medicinal products. The document lists in tabulated form the names under which the preparations are sold in Latin American countries, their composition, equivalents and alternatives in the United States and U. S. manufacturers and suppliers. Included are biologics, alkaloids and other chemicals, as well as vitamins, glandular products and many specialties. The information is of value to interested physicians and other scientists and to the drug and pharmaceutical industry. The American drug industry is becoming increasingly aware of the role it can assume in extension of American medicine to other nations. Those who believed Germany held chemical superiority in the Spanish Americas will be surprised to learn of the influence exerted by the drug industry of the United States. The purpose of the manual is to permit the profession in Latin America to become aware of the availability of medicinal products, their brand names and manufacturing sources, or the equivalent alternative available in the United States. Copies of the manual may be obtained from the Superintendent of Documents, Washington 25, D. C., or from any Department of Commerce field office at 50 cents each. The chief of the Drugs and Pharmaceuticals Unit, Bureau of Foreign and Domestic Commerce of the Department of Commerce, who was primarily responsible for the accumulation of the information in the manual, has emphasized elsewhere¹ the possibilities in foreign drug markets. He insists that a \$100,000,000 postwar foreign outlet is feasible and he believes that more firms could and should share in this market.

5. Smith, O. W., and Smith, G. V.: *Proc. Soc. Exper. Biol. & Med.* 50: 119 (June) 1945.

1. Delahanty, T. W.: *Small Firms Should Share in Foreign Drug Markets*, *Foreign Commerce Weekly* 20: 3 (June 30) 1945.

BED REST IN TUBERCULOSIS

Since Dock¹ emphasized that prolonged rest in bed during illness is not always salutary, numerous writers have critically examined the indications and contraindications in various diseases. Tuberculosis, the disease in which prolonged bed rest has been the remedy *par excellence*, has apparently received little consideration in these discussions. Now Peck and Willis² have evaluated bed rest in the treatment of tuberculosis. An analysis of 751 consecutive necropsies indicates the relative insignificance of the one great danger stressed for bed rest, namely pulmonary embolism. The evils that inhere in bed rest, Peck and Willis believe, are in its misapplication. If the diseased area is accurately localized, especially if cavity is present, and if the bedfast patient lies at intervals throughout the day in comfortable but proper postures for facilitating drainage, secretions are raised with a minimum of cough or without cough; thus the most potent cause of intracanalicular spread is abolished. Inherent in the success of bed rest as therapy is recognition of the emotional maladjustment of the average new and long term patient. When the physician understands the needs of the patient and is willing to take the time to explain and repeat and convince the patient of the value of the scheme, the success of such treatment is greatly enhanced. Bed rest, to be successful, must be correlated properly with collapse therapy. Good bed rest "is a precise method of treatment with clearcut specifications and is based on three fundamental principles: mental repose, muscular relaxation and adequate drainage."

NBC BROADCASTS RESUMED

On page 817 in this issue of THE JOURNAL appears a notice of the resumption of network broadcasting by the American Medical Association in cooperation with the National Broadcasting Company over the networks of the latter and affiliated stations. This will be the eleventh consecutive year of nationwide dramatized health broadcasts on the NBC networks. The dramatized broadcasts were preceded by two years of radio talks on the same networks. The American Medical Association has broadcast continuously since 1923, using various Chicago stations and several networks. Broadcasts have sometimes been as frequent as twice a day, but experience has shown that once a week, except during special events such as annual meetings, is sufficient. During this time numerous local broadcasts by state and county medical societies have been carried out. The American Medical Association Bureau of Health Education acts as a clearing house for assembling, editing and redistributing radio talks originated locally so that the best of these talks are made available throughout the nation. In 1943 the Bureau began a program of electrical transcriptions, of which there are now seventy-five programs available and additional ones in preparation; these transcriptions are estimated to be on the air an average of eighty-five or more times weekly. This coverage by radio represents not only an impor-

tant phase of health education of the public but also a large contribution from the broadcasting industry to public welfare. The time made available for these broadcasts has been furnished gratis on the theory that the station provides the facilities and the medical profession the materials for a joint public service in accordance with the provisions of the Federal Communications Act under which radio stations are obliged to broadcast "in the public interest, convenience and necessity." The cooperation by radio in health education has gone beyond what radio might reasonably have considered its obligations and has constituted genuine and valuable cooperation which the public should appreciate. Medical men and other scientists have been sharply critical of radio as, indeed, they have been of the press and other advertising mediums for the dissemination of false and misleading advertising of a medical and health character. Radio, often subjected to criticism, should also be given due credit for the contributions it has made to the cause of health education.

EFFECT OF STREPTOMYCIN ON BACTERIA IN URINARY INFECTIONS

Helmholz¹ points out that the sulfonamide compounds, while effective against most bacteria found in urinary infections, are ineffective against *Streptococcus fecalis* and *Pseudomonas aeruginosa*. Waksman and his associates showed that streptomycin has strong bactericidal action on both gram negative and gram positive bacteria, including *Pseudomonas aeruginosa*. Elias and Durso have shown that streptomycin given by the intravenous or intramuscular route is excreted in high concentration in the urine. Helmholz performed experiments in vitro with urine from a patient who had been receiving 2,000,000 units daily of streptomycin for weeks. This urine contained as high as 1,330 units of streptomycin per cubic centimeter. The urine was Seitz filtered and controlled for sterility. The amount of drug carried over in 0.5 cc. of urine when diluted ten times in 5 cc. of agar was sufficient to prevent the development of any colonies on the plates made immediately after the inoculation of urine. The use of 100 units of streptomycin per cubic centimeter of urine with inoculations of fewer than 2,000 bacteria per 0.5 cc. results in complete sterilization in twenty-four hours. The undiluted urine killed the two most resistant bacteria, two strains of *Streptococcus fecalis* and *Pseudomonas aeruginosa*, one hour after inoculation. Helmholz concludes that 100 units per cubic centimeter of streptomycin is probably sufficient to reduce rapidly the number of any bacteria found in urinary infections and that 235 units, which is only about one fifth of the concentration that can be obtained in the urine, is sufficient even with massive inoculation to sterilize the infected urine. At concentrations of 1,330 units per cubic centimeter the two most resistant bacteria are killed within one hour. In view of these results, Helmholz believes that streptomycin should prove to be the most useful urinary antiseptic so far developed.

1. Dock, William: The Evil Sequelae of Complete Bed Rest, J. A. M. A. 125: 1033 (Aug. 19) 1944.
2. Peck, W. M., and Willis, H. S.: Bed Rest in Tuberculosis—Its Dangers and Proprieties, Am. Rev. Tuberc. 52: 15 (July) 1945.

1. Helmholz, H. F.: The Effect of Streptomycin on Bacteria Commonly Found in Urinary Infections, Proc. Staff Meet., Mayo Clin. 20: 357 (Oct. 3) 1945.

MEDICINE AND THE WAR

ARMY

PROGRAM FOR DEFERRED RESIDENTS OF MEDICAL CORPS

Following is the modification of the program for deferred residents of the Medical Corps, published recently in War Department Circular No. 296, which will be effective until March 28, 1947 unless sooner rescinded or superseded:

1. **GENERAL AND ELIGIBILITY.** a. Medical Corps officers on active duty as explained below are eligible for release from active duty to accept residencies or fellowships in civilian hospitals. Upon their release, they must be replaced by a Medical Corps officer now on inactive duty and serving as a resident or fellow in the hospital to which the officer being released will report for postgraduate training.

b. Criteria for eligibility:

- (1) Must have been on active duty prior to Jan. 1, 1943.
- (2) Must be under 40 years of age.
- (3) Must not be eligible for release from active duty under other War Department directives or army regulations.

2. **APPLICATIONS** Procedure for filing

a. Application for determination of eligibility for release should be addressed to the Adjutant General (Attention Officers' Branch, Separation Section, Munitions Building, Washington, D. C.) through military channels. Application should be accompanied by a true copy of WD AGO form 178 2 or 66 3 in duplicate with a 2 by 2 inch passport type photograph attached.

b. A statement must accompany the application indicating that the criteria mentioned in paragraph 1 b apply. In addition the following information must be furnished.

- (1) Name of hospital in which residency or fellowship is desired. In this connection, first consideration should be given to applying for a residency or fellowship in the hospital in which the officer received his original training if the hospital has Medical Corps officers on an inactive status serving as residents or fellows.
- (2) A second and third choice of hospital will be given.
- (3) In the event applicant has already received an appointment from a hospital this fact will be clearly stated, giving the date the appointment was received, the type of residency or fellowship and the period of time during which the appointment will be effective.
- (4) No hospital should be named which does not have Medical Corps officers on an inactive status serving as residents or fellows.

3. **FORWARDING OF APPLICATIONS** a. All applications will be forwarded through military channels to the Adjutant General (Attention Officers' Branch, Separation Section, Munitions Building, Washington, D. C.) for forwarding to the Surgeon General regardless of whether the application is approved or disapproved by forwarding commander.

b. The first forwarding endorsement will include the following statements:

- (1) Approval or disapproval.
- (2) There is (or is not) an overall surplus in the command jurisdiction of officers qualified and available to fill the duty assignments for which the officer concerned is qualified.
- (3) A replacement will (or will not) be required and is (or is not) readily available.
- (4) Services of the officer have been such as to entitle him to separation under honorable conditions.
- (5) No disciplinary action or reclassification proceedings under AR 605-230 are pending or appropriate in the case.
- (6) No hospital disposition board or Army retiring board proceedings are pending or believed to be appropriate.

c. Subsequent forwarding endorsements will include statements of approval or disapproval and such other remarks as may be deemed pertinent.

4. **ACTION OF THE SURGEON GENERAL'S OFFICE AND PROCUREMENT AND ASSIGNMENT SERVICE.** WAR MANPOWER COMMISSION. a. Upon receipt and approval of the application by the Surgeon General, the application will be noted and forwarded to the Procurement and Assignment Service, War Manpower Commission, which service will act as intermediary agent between the War Department and the civilian hospital. The approval or disapproval of the application by the civilian hospital will be returned to the Surgeon General through the Procurement and Assignment Service, the Surgeon General through the Procurement and Assignment Service, War Manpower Commission, accompanied by the name of a Medical Corps officer on inactive duty, who will be released by the hospital for active military service.

b. Upon receipt of an approved application from the Procurement and Assignment Service, War Manpower Commission, the Surgeon General will forward the papers to the Adjutant General (Attention Officers' Branch, Separation Section, Munitions Building, Washington, D. C.) giving the date the separation is to become effective and concurrently advise the applicant through military channels of the approval of the application and the date the applicant will be released from duty.

c. Concurrently with action taken in b above, the Surgeon General will request that orders be issued assigning the Medical Corps officer who is serving as a resident or fellow on an inactive status to active duty. The effective date of active duty will be ten days later than the date at which medical officer released from active service will report to the hospital.

CONVENTION HELD AT SCHOOL OF AVIATION MEDICINE

The Army Air Force School of Aviation Medicine, Randolph Field, Texas, was the scene of part of the Texas Surgical Society's two day convention in San Antonio recently. The program included a series of lectures and discussions by members of the AAF School of Aviation Medicine staff, an exhibit of specialized air force equipment and medical drawings of surgical techniques. Col. Fratis L. Duff, assistant commandant, opened the afternoon's schedule with a discussion of the activities of the AAF School of Aviation Medicine during the war. A paper on the research program and problems was presented by Major Herman S. Wigodsky, acting director of research.

"Experimental Production of Injuries by Deceleration" was the topic of a film-lecture given by Capt. Harry D. Kingsley. Major George M. Hass, chief of the department of pathology, addressed the society on the nature of injuries to personnel in aircraft accidents.

Major Randolph L. Clark Jr., under whose direction the program was planned, explained the surgical services of the AAF School of Aviation Medicine and illustrated his remarks with reproductions of medical photographs used in the teaching of aviation medical examiners. Cooperating with Major Clark in organizing the school's role in the conference was the society's secretary, Dr. Walter Stuck, San Antonio, Texas.

FORTY-NINTH FIELD HOSPITAL COMMENDED

The 49th Field Hospital, commanded by Major Thomas LaBarbera, Brooklyn, was recently awarded the Meritorious Service Unit Plaque "for superior performance of duty in the accomplishment of exceptionally difficult tasks during the period of Jan. 1 to May 8, 1945." The 49th gave medical and surgical support to the 66th Infantry division besieging the heavily defended ports of St. Nazaire and Lorient, Brittany, France. Functioning under arduous field conditions, the unit brought on the spot definitive treatment that saved hundreds of lives. Doctors, nurses and corpsmen worked seven days, and working days frequently ran into twenty-four hours. The hospital was under constant threat of German artillery fire. During this mission the unit was compelled to move 5 miles to the rear while continuing full capacity treatment of battle casualties. The unit is now operating station hospitals at the Calais Staging Area, Marseilles, and at Lyons, France.

APPOINTED HONORARY CONSULTANT TO THE SURGEON GENERAL

Comdr. Arnold F. Emch, who recently was placed on inactive duty after three years as special assistant to the Surgeon General and chief of the Administration Division of the Bureau of Medicine and Surgery, has been appointed honorary consultant to the Surgeon General and to the Secretary of the Navy. Vice Admiral Ross T. McIntire, Surgeon General of the Navy, expressed his satisfaction in having Dr. Emch available for management consultation in view of his exceptional services to him and to the Navy Medical Department.

PLAQUE AWARDED TO 381st STATION HOSPITAL

The 381st Station Hospital was recently awarded the Meritorious Service Unit Plaque for superior performance of exceptionally difficult tasks during the period July 6, 1945 to Sept. 25, 1945. The hospital is under the command of Lieut. Col. H. B. Hermann, New York; Major W. R. Carman, Islip, Long Island, chief of medical service, and Major Harry Martz, Birmingham, Ala., chief of surgical service.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Barfield-Carter, M., Major, 805 Woodward Bldg., Birmingham.
Donald, Joseph M., Lt. Col., 2900 Surrey Rd., Birmingham.
Douglas, Joseph W., Capt., Brewton.
Dunning, Guy J. Jr., Capt., Linden.
Hendrix, Richard W., Lt. Col., MacMillan St., Evergreen.
Holler, Carl A. F., Capt., Box 190, Fort Payne.
Johnson, George E., Major, Uriah.
Lane, Thomas H., Capt., T. C. I. Hosp., Fairfield.
Lary, John H., Major, 407 Madison St., Huntsville.
Linn, Julius E., Major, 2909 Thornhill Rd., Birmingham.
McGraw, Felix J., Major, 1 S. 55th Pl., Birmingham.
Martin, John A., Lt. Col., 119 Gilmer Ave., Montgomery.
Meigs, James H., Major, 1209 Glenwood Terrace, Anniston.
Parker, Harry J., Capt., Madison.
Peterson, Edward J., Capt., St. Vincent's Hosp., Birmingham.
Timberlake, Landon, Major, 2121 Highland Ave., Birmingham.
Woodall, Paul S., Lt. Col., 201 Mount Ave., Birmingham.
Woodruff, Gerald G., Lt. Col., 620 Highland Ave., Anniston.

Arizona

Born, Ernest A., Capt., 310 S. Mount Vernon, Prescott.
Hinton, Joseph H., Capt., Fort Thomas.
Ketcherside, H. D., Major, 1006 Professional Bldg., Phoenix.

Arkansas

Anderson, Powhattan R., Capt., 1923 Main St., Little Rock.
Champion, Walton T., Major, Gillett.
Dunaway, Edwin L., Major, 1712 Scott, Conway.
Mack, Joseph J., Col., Little Rock.
Patton, Doyle L., Capt., 530 W. Block, Eldorado.
Smith, James T., Capt., P. O. Box 276, Paris.
Verser, Joe, Capt., Harrisburg.

California

Antonini, Charles J., Capt., 1413 38th Ave., San Francisco.
Asher, Leonard M., Major, 1901 Fairburn Ave., Los Angeles.
Badami, Anthony G., Capt., 1086 Camine Pablo, San Jose.
Brock, Burton K., 1st Lt., 236 Michigan Ave., Fresno.
Cawley, John J. Jr., Capt., 2003 Lester, Bakersfield.
Cecil, James J., Major, Patton State Hosp., Patton.
Chernow, Marvin L., Major, 3752 Woolwine Dr., Los Angeles.
Crowley, Francis L., Major, 519 Monte Vista Ave., Oakland.
Duncan, John J., Capt., 11123 Ophir Dr., Los Angeles.
Elliot, James S., Major, 1019 Hampshire St., San Francisco.
Elzey, Neil D., Capt., 1353 2d Ave., San Francisco.
Faier, Herman I., Major, 1930 Wilshire Blvd., Los Angeles.
Falk, Charles C. Jr., Major, 507 F St., Eureka.
Ferris, George J., Capt., 1588 35th Ave., San Francisco.
Haskell, Maurice M., Major, 1501 Pioneer Blvd., Artesia.
Hoffman, Ralph L., Capt., 3661 Pringle St., San Diego.
Houloose, James, Major, 3982 Gaviota Ave., Long Beach.
Hrenoff, A. K., Major, 2102 Golden Gate Ave., San Francisco.
Jacobus, W. L. Jr., Lt. Col., 3757 Hepburn Ave., Los Angeles.
Lim, Kwong, Capt., 1243 Minnesota St., San Francisco.
McCandless, Charles H., Capt., 5142 Escalon Ave., Los Angeles.
McCreary, J. H., Capt., 901 S. Kingsley, Los Angeles.
McCulloch, Robert J., Capt., 57 St. Joseph Ave., Long Beach.
Marchus, Donald B., Lt. Col., 1726 Market St., Redding.
Marks, Joseph H., Capt., 4340 Leimert Blvd., Los Angeles.
Marquis, Harold H., Major, 97 San Pablo Ave., San Francisco.
Maximov, N. G., Major, 2710 California St., San Francisco.
Mourer, Lyle A., Major, 5218 Angeles Vista Blvd., Los Angeles.
Ogden, Roderick A., Major, 2824 Park Way, Bakersfield.
Palmer, Alfred M., Capt., 625 Scott St., San Francisco.
Phetteplace, Dale O., Major, 806 N. Spadra Rd., Fullerton.
Reynolds, Stephen, Major, 230 El Bosque Rd., Santa Barbara.
Rose, Sidney J., Capt., 1520 E. Firestone Blvd., Los Angeles.
Rovane, John W., Capt., Yolo County Hosp., Woodland.
Schade, Frank F., Col., 1800 W. 6th St., Los Angeles.
Schmidt, Allen R., Capt., 2007 Wilshire Blvd., Los Angeles.
Schroeder, Ralph L., Capt., 443 Gerona, San Gabriel.
Schuldburg, Irving I., Capt., 6509 Hayes Dr., Los Angeles.
Schurenman, Oliver P., Capt., 1307 Stradford Ave., Pasadena.
Spencer, James A., Capt., 2280 Pacific Ave., San Francisco.
Stansbury, John R., Capt., General Hosp., Santa Barbara.
Sweet, Norman J., Major, U. of Calif. Hosp., San Francisco.
Topic, John R., Capt., 312 Broad St., Nevada City.
Walker, Ralph J., Lt. Col., 4265 Atlas Ave., Oakland.
Weizer, Ernest A., Major, P. O. Box 831, Oakdale.
Wilmes, Malcolm N., Major, 523 Bartlett Ave., Woodland.
Wyborne, Eugene H., Capt., Riverside Co. Hosp., Arlington.

Colorado

Bradley, John W., Major, 2212 Wood Ave., Colorado Springs.
Brethower, Norman A., Capt., 606 S. 2d St., Montrose.
Fee, Edward P., Capt., 533 Ralson, Arvada.
Hick, Lawrence L., Major, Delta.
Ralston, Robert J., Capt., Holyoke.

Connecticut

Chipman, Sidney S., Major, 6 Stevens St., Norwalk.
Conway, Herbert, Lt. Col., 225 Ocean Dr. West, Stamford.
Friedman, Emerick, Capt., Norwich State Hosp., Norwich.
Goldschmidt, Myer, Capt., 10 Grove Hill, New Britain.
Haas, William R., Col., 789 Howard Ave., New Haven.
Krosnick, Gerald, Major, 574 Elm St., New Haven.
Meyers, Royal A., Major, 162 Main St., Watertown.
Rogers, Robert P., Lt. Col., 111 North St., Greenwich.
Scoville, William B., Major, 334 N. Steele Rd., W. Hartford.
Simmes, John P., Capt., 446 Stratfield Rd., Bridgeport.
Slater, Daniel, Capt., 1100 Dixwell Ave., Hamden.
Smith, William B., Lt. Col., 91 Center St., Wethersfield.
Sollosy, Alexander, Capt., 365 McKinley Ave., Bridgeport.
Unsworth, Arthur C., Lt. Col., 179 Allyn St., Hartford.

Idaho

Bovenmyer, Earl S., Major, 243 E. 6th St., Pocatello.
Durose, Fred W., Capt., P.O. Box 172, Bonners Ferry.
Guyett, Harvey E., Capt., 562 Jay St., Idaho Falls.
Holstein, Theodore, Capt., Route 2, Boise.
Hunter, Lewis B., Capt., 111 Bank St., Wallace.
Rulien, Ward A., Major, Wendell.
Schow, Floyd W., Major, Hailey, Blaine County.
Van Dorn, Robert W., Major, Coeur D'Alene.
Wendle, Cornelius C., Major, Sandpoint.

Illinois

Droegemueller, William H., Major, 116 Burnham Pl., Evanston.
Ellwood, Walter W., Lt. Col., 1525 E. 53d St., Chicago.
Epstein, Jacob M., Capt., 5404 S. Woodlawn Ave., Chicago.
Farinacci, Maurice G., Capt., 5519 S. Tolman, Chicago.
Giganti, James J., Capt., 2614 Iowa St., Chicago.
Ginsberg, Robert S., Capt., 5220 Drexel Blvd., Chicago.
Golden, Jacob S., Capt., 531 Briar Pl., Chicago.
Goodhart, Jacob A., Capt., 6557 Francisco Ave., Chicago.
Graham, John P., 1st Lt., Avon.
Herron, Earl, Major, 162 E. Ohio St., Chicago.
Hirsh, Edwin I., Capt., 3658 N. Pinegrove Ave., Chicago.
Hoffman, Samuel J., Lt. Col., 3800 Lake Shore Dr., Chicago.
Holvey, Ervin H., Capt., 347 So. Harvey St., Oak Park.
Horning, V. H. H., Capt., 1752 New England Ave., Chicago.
Hume, Albert T., Major, 400 E. Washington St., Monticello.
Jakubowski, Casimir L., Capt., 1324 N. Ashland Ave., Chicago.
Johnson, Lowell R., Capt., 1424 N. Oak St., Danville.
Knowles, Donald B., Capt., 7409 Clyde Ave., Chicago.
Koenigsberg, Noah M., Major, Bellflower.
Kudolla, Charles R., Capt., 4958 Lawrence Ave., Chicago.
Lampert, Elmer G., Capt., 625 S. Wheaton Ave., Wheaton.
Larrabee, John A., Capt., 5724 Harper Ave., Chicago.
Lemberg, Louis, Capt., 2900 W. Fitch Ave., Chicago.
Luke, Edward A., Major, 710 Center St., Waukegan.
McDowell, Mordecai M., Major, 1207 E. Main St., Danville.
Mammoser, Lambert F., Capt., 6127 NW Hwy, Chicago.
Mason, John C., Capt., 109 N. Chicago, Rossview.
Millas, John G., 1st Lt., 1607 S. 51st Ave., Cicero.
Mizock, Albert A., Capt., 3952 W. Jackson Blvd., Chicago.
Motier, Jean H., Capt., 7427 S. Wentworth Ave., Chicago.
Mullen, Timothy F., Lt. Col., Seneca.
Musick, Rowland H., Capt., 904 14th Ave., Mendota.
Nash, John V., Major, 5412 Ferdinand St., Chicago.
Nelson, Clayton, E. J., Capt., 3822 N. Hoyne Ave., Chicago.
Partridge, Milton H., Capt., 666 St. John St., Elgin.
Pilot, Isadore, Major, 507 Briar Pl., Chicago.
Post, John, Lt. Col., 5811 Dorchester Ave., Chicago.
Puestow, Charles B., Col., 874 Ridgewood Dr., Highland Park.
Ranney, Alden B., Capt., 232 S. Euclid Ave., Oak Park.
Reierson, Peter A., Major, 1336 S. Newberry St., Chicago.
Schoolman, Joseph G., Capt., 4742 Ingleside Ave., Chicago.
Stephen, Robert J., Capt., 15 N. Cagwin Ave., Joliet.
Stephenson, George W., Major, 1516 E. Grove St., Bloomington.
Stuart, Carroll W., Major, 330 N. Austin Blvd., Oak Park.
Sutton, Robert M., Major, 107 Moss Ave., Peoria.
Sweeney, Anthony J. Jr., Major, 1770 Arthur Ave., Chicago.
Taylor, James H., Capt., 200 Hanson St., Villa Grove.

PHYSICIANS SEPARATED FROM SERVICE

I. A. M. A.
Nov. 17, 1945

Illinois—Continued

Thrift, Chester B., Major, 5804 W. Chicago Ave., Chicago.
Tinsley, Milton, Major, 3304 Lexington St., Chicago.
Turley, Vigo T., Major, 1 Edgewood Court, Decatur.
Utz, Walter J., Capt., 2415 West Fifth St., Peru.
Vitacco, John J., Capt., 1746 Nashville Ave., Chicago.
Walker, A. E., Major, 8132 Drexel, Chicago.
Ward, Carl F., Major, 601 W. Henry St., Pontiac.
White, Minor E., Lt. Col., 1121 S. Myrtle Ave., Kankakee.
Wiltrakis, George A., Lt. Col., 4330 Washington Blvd., Chicago.
Wood, Oliver K. M., Capt., Ipava.

Kansas

Cauble, Wilbur G., Capt., Benedict.
Evans, Farris D., Major, Conway Springs.
Forman, Louis H., Capt., St. Francis Hosp., Wichita.
Girod, Charles I., 1st Lt., Cambridge.
Kamish, Robert J., Major, Halstead.
Leiker, Raymond J., Capt., 2924 Broadway, Great Bend.
Marker, Daniel I., Major, 1414 Fairchild St., Manhattan.
Mitchell, John C., Major, 900 Custer, Salina.
Morgan, John L., Lt. Col., 712 Neosho St., Emporia.
Moscer, Ernest C., Capt., 624 Iowa St., Holton.
Schnee, Benjamin, Capt., 317 Walnut St., Leavenworth.
Veatch, Harry J., Major, 605½ N. Broadway, Pittsburg.
Wakeman, Don C., Lt. Col., 1324 Topeka Ave., Topeka.

Maine

Geyerhahn, George, Capt., 6 Albany St., South Portland.
Ham, Joseph G., Capt., 105 Pine St., Portland.
Holt, Charles L., Capt., 29 Deering St., Portland.
Merrick, John R., Capt., 26½ Sewall St., Augusta.
Milliken, Howard H., Capt., 104 Frances St., Portland.
Tabachnick, Henry M., Major, 110 Park Ave., Portland.
Towne, Charles E., Major, Waterville.

New Mexico

Bickel, Robert D., Lt. Col., 205 East Hill Ave., Gallup.
Foster, Elden H. H., Lt. Col., Vet. Adm. Fac., Albuquerque.
Hoover, Thomas B., Major, Tucumcari.
Johnson, Hanson B., Capt., Box 6, Hot Springs.
Mendelson, R. W., Lt. Col., 1016 Parkland Pl., Albuquerque.
Wier, David T., Major, Box 474, Belen.

New York

Anthony, Eugene W., Capt., 868 Oneida St., Fulton.
Averill, John B., Capt., Lake Mahopac.
Bergamini, Herbert M., Lt. Col., 101 E. 89th St., New York.
Bernstein, Jacob C., Capt., Broadway, Greenlawn.
Campanella, Paul J., Capt., 415 Broadway, Fulton.
Campbell, Darrell A., Major, 111 Union St., Schenectady.
Darby, Isaac K., Capt., 1 St. Nicholas Ter., New York.
Davenport, Frank S., Capt., Averill Pk., New York.
Diefendorf, R. O., Capt., % Major J. E. Diefendorf, West Point.
Dundee, John C., Capt., 3438 81st St., Jackson Heights.
Ennis, David, Capt., 29 Bear St., Lyons.
Fatcheric, John A., Capt., 300 S. Lowell Ave., Syracuse.
Ferrara, Joseph D., Capt., 163 E. 81st, New York.
Fiegoli, Nicholas F., Capt., 1727 Hunt Ave., Bronx.
Fierro, Eugene A., Capt., 50-12 43d St., Woodside.
Fisk, Shirley C., Capt., 10 East 90th St., New York.
Fox, Sheldon, Capt., 238 West End Ave., Brooklyn.
Freese, Carl F., 1st Lt., 62 Wlena Ave., Freeport.
Frick, Max, Major, 231 East 76th St., New York.
Friedman, Hyman, Capt., 2140 Ocean Ave., Brooklyn.
Fulmer, Charles M., 1st Lt., 109 W. Heman St., E. Syracuse.
Gardner, Thomas G., Major, Queens Gen. Hosp., Jamaica, N.Y. (or) 204 Highland Ave., Salamanca.
Gerner, Morris I., Major, 21-08 Newton Ave., Long Island.
Gibson, Thomas S., Capt., 15 East 36th St., New York.
Gillman, Louis, Capt., Queens GH, Jamaica.
Giordano, Albert, Capt., 2922 Grand Concourse, New York.
Giovannelli, Ronald, Capt., 77 W. Main St., Oyster Bay.
Gittleman, Solomon E., 1st Lt., 647 March Ave., Brooklyn.
Gold, Alex E., Capt., 234 Greenwich St., Hempstead.
Golden, Harold T., Major, 119 Mary St., Herkimer.
Golden, Theodore, Lt. Col., 220 W. 57th St., New York.
Goldman, Ephraim J., Capt., 225 Candee Ave., Syracuse.
Goodkin, George, Capt., 1665 Andrews Ave., New York.
Gordon, William C., Capt., 1359 York Ave., New York.
Gray, Philip, Capt., 484 Penna. Ave., Brooklyn.
Greene, John E., Major, 176 54 Kildare Road, Jamaica.
Greenhall, Armand L., Major, 685 West End Ave., New York.
Grodzicker, Harry, Capt., 549 Bedford Ave., Brooklyn.

New York—Continued

Griffin, Thomas E., 1st Lt., 37 Niagara Falls Blvd., Buffalo.
Gundy, John E., Major, 20 Greenleaf St., Rye.
Hall, John B., Capt., 235 Hallock St., Jamestown.
Hamill, John A. C., Major, 55 Hillcrest Ave., Port Chester.
Hamilton, George C., Lt. Col., 537 Chenango St., Binghamton.
Hartstein, A. S., Capt., 61-80 80th St., Elmhurst, Queens.
Heath, F. K., Major, The Meadows, S. Road, Poughkeepsie.
Horan, William H., Capt., 9 Pickwick Rd., Manhasset.
Horne, Robert P., Capt., Skaneateles.
Horowitz, Isaac, Capt., 314 E. 193d St., Bronx.
Horowitz, Jacob, Capt., 143 W. 49th St., New York.
Howes, Clifford Eggleston, 1st Lt., Rocky Point, Long Island.
Iraci, Joseph P., Capt., 5444 101 St., Corona.
Ittri, Francis V., 1st Lt. 2383 83d St., Brooklyn.
Ittleman, Felix L., Major, 888 Montgomery St., Brooklyn.
Jacobs, Theodore T., Major, 100 High St., Buffalo.
Jacobs, Thomas P., Capt., 280 Beechmont Drive, New Rochelle.
Judelsohn, Louis, Major, 75 Fordham Drive, Buffalo.
Kaplan, Bernard I., Capt., 67 South Highland Ave., Ossining.
Katz, Abraham, Capt., 335 Cypress Ave., Bronx.
Kaywin, Louis, Capt., 71 St. Marks Pl., New York.
Klein, Daniel, Major, 3689 Bedford Ave., Brooklyn.
Konigsberg, Max S., Capt., 237 W. 233d St., New York.
Langsam, Sanford M., Capt., 1415 Motte Ave., Far Rockaway.
Lear, Phillip E., Major, 1240 E. 26th St., Brooklyn.
Leffert, Jacob, Capt., 10 Argyle Rd., Brooklyn.
Levin, Thomas, Major, 2325 University Ave., New York.
Leonidoff, Aleksei A., Capt., Pendell Rd., Poughkeepsie.
Leslie, Robert J., Major, 2620 Glenwood Rd., Brooklyn.
Letterese, Thomas G., 1st Lt., 2319 Grotona Ave., New York.
Levine, William, Capt., 754 Brady Ave., Bronx.
Levy, Jacob, Capt., 336 E. 91st St., Brooklyn.
Levy, Sidney, Capt., 1020 E. 16th St., Brooklyn.
Lewis, Ned A., Lt. Col., 53 Linden St., Brooklyn.
Liepmann, Hans W., Capt., Spring St., Monroce.
Lo Ponte, Joseph J., Capt., 2020 E. 3d St., Brooklyn.
McManus, Matthew P., Capt., 219-16 43d Ave., Bayside.
McMillan, James R., Capt., 303 East 20th St., New York.
McNeer, Gordon, Major, 644 Riverside Dr., New York.
Manganelli, Charles V., Major, 26 W. 61st St., New York.
Mangiaracina, C. C., Capt., 88-04 Woodhaven Blvd., Woodhaven.
Mansker, Joseph S., Capt., 2075 Wallace Ave., Bronx.
Marks, Jerome L., Major, Beth Israel Hosp., Stuyvesant Park, East New York.
Mele, Joseph M., Capt., 619 Jay St., Rochester.
Melton, Joseph, Capt., 1810 Nereid Ave., Bronx.
Mencely, John K. Jr., Major, Coeymans.
Myer, Clifton G., Major, 34 Catherine St., Lyons.
Oliva, Joseph J., Capt., 2901 170 St., Flushing.
Parise, Nicholas F., Capt., 10 Washington St., Brooklyn.
Pender, Patrick F., Capt., 2114 Genesee St., Utica.
Perillo, Louis A., Capt., 1927 Pilgrim Ave., New York.
Perl, Theodore, Capt., 225 Squires Ave., Endicott.
Piacentine, Pasquale A., Capt., 39-20 62d St., Woodside.
Pisani, Bernard J., Lt. Col., 130 E. 67th St., New York.
Porrizzo, Andrew P., Major, 366 Clinton St., Brooklyn.
Province, William D., Major, 622 W. 168th St., New York.
Rautenstrauch, Walter Jr., Major, 42-15 220th St., Bayside.
Roberts, Alfred E., Capt., Main St., Portland.
Romano, Michale J., Capt., 114 School St., Yonkers.
Rosner, Henry, Capt., 4824 Ave. I, Brooklyn.
Reid, Henry N., Capt., 1413 N. Madison St., Rome.
Rubbone, Mario D., Capt., 31-41 28th Rd., Long Island.
Rubin, Julius, Capt., 439 Sackman St., Brooklyn.
Rudner, Nathan, Capt., 3511 Putnam Pl., Bronx.
Ryan, David F., Capt., 61 Hildreth Pl., Yonkers.
Sachs, Elihu M., Major, 98 Riverside Dr., New York.
Schellenger, E. A. Y., Major, 33 Fifth Ave., Merchantville.
Schnittke, Sidney, Capt., 270 Convent Ave., New York.
Schussheim, Joseph, Capt., 3051 Ocean Ave., Brooklyn.
Senfeld, Sidney, Capt., 2122 Quentin Rd., Brooklyn.
Silvera, Salomon, Major, 7524 Bay Parkway, Brooklyn.
Smith, Harold B., Capt., 126 Rugby Road, Syracuse.
Smith, Joel F., Capt., 1799 Bedford Ave., Brooklyn.
Spinard, Walter I., 1st Lt., 143 Keap St., Brooklyn.
Sprei, Emanuel, Capt., 143 West 96th St., New York.
Spritzer, Irwin I., Capt., 1414 E. 12th, Brooklyn.
Stagnitto, Rosario J., Capt., 482 Hawley St., Rochester.
Strutton, William R., Major, Rockland St. Hosp., Orangeburg.
Thompson, James B., Capt., Gen. Hosp., Rochester.
Vandow, Jules E., Capt., 339 E. 58th St., New York City.
Van Wagenen, William P., Lt. Col., Fishell Road, Rush.
Warres, Herbert L., Capt., 1987 Ocean Parkway, Brooklyn.
Zimmerman, Louis, Major, 340 St. Johns Pl., Brooklyn.

PHYSICIANS SEPARATED FROM SERVICE

North Dakota

Ivers, George U., Capt., 424 deLendrecie Bldg., Fargo.

Oklahoma

Bartheld, Floyd T., Major, 530 E. Creek, McAlester.
Coward, O. Hiram, Major, 115 W. 8th St., Bristow.
Lowrey, Robert W., Lt. Col., Gen. Del., Poteau.
Mohler, Eldon C., Lt. Col., 212 Community Bldg., Ponca City.
Morgan, Louis S., Capt., 128 Elmwood St., Ponca City.
Pollack, Simon, Lt. Col., 108 W. 6th St., Tulsa.
Rucks, W. W. Jr., Lt. Col., 301 N. W. 12th St., Oklahoma City.
Schnitman, Jacob, Capt., CCC Co., 3886, Gould.
Shorbe, Howard B., Major, 2708 N. W. 22d St., Oklahoma City.
Simon, John F., Lt. Col., 606 Columbia, Lawton.
Turner, Edwin C., 1st Lt., 711½ N. E. 16th St., Oklahoma City.

Oregon

Browne, Walter P., Capt., 2130 N. E. Knott St., Portland.
Burns, Edgar M., Lt. Col., 902 Stevens Bldg., Portland.
Hollenbeck, W. F., Lt. Col., 5360 S. W. Humphrey, Portland.
Lage, George H., 1st Lt., 2736 N. E. 25th, Portland.
Littlehales, Charles E., Major, 6615 S. E. 34th St., Portland.
McGowan, Gordon W., Capt., 1601 G St., The Dalles.
Moore, William J., Capt., 902 Lawndridge, Grants Pass.
Rawls, Noel B., Capt., Emanuel Hosp., Portland.
Robbins, Carl W., Lt. Col., 1273 Mill St., Eugene.
Schuster, Earl J., Capt., 302 5th Ave., Tillamook.
Vogt, Paul R., Major, 900 Trevitt St., The Dalles.

Pennsylvania

Agnew, Edward A., Capt., Jacksonwald.
Bell, Cyril B., Capt., West Side, Glen Campbell.
Butler, Claude H., Major, Waymart.
Colosi, Nicholas A., 1st Lt., 122 S. York Rd., Willow Grove.
Ellson, John V. Jr., Col., 48 Glendale Rd., Upper Darby.
Finegold, Joseph, 1st Lt., 5521 Raleigh St., Pittsburgh.
Gillespie, James T., Major, 3926 W. Ridge Rd., Erie.
Hawkins, Sumpter W., Capt., Abington Mem. Hosp., Abington.
Hazlett, Frank D., Major, 825 Allison Ave., Washington.
Katzman, Bertram, Capt., 17th & Summer Sts., Philadelphia.
Kazmierski, Joseph M., Capt., 335 Hancock St., Pittsburgh.
Lawson, Edward K. Jr., Major, 2533 Walnut St., Penbrook-Harrisburg.
Leavy, Philip Gerard, Major, 145 Stanton Court, Pittsburgh.
Lemon, Arden N., Lt. Col., 3701 N. Broad St., Philadelphia.
Lipsius, Edward I., Capt., 5918 Larchwood St., Philadelphia.
McCune, David P. J., Major, 1830 Converse St., McKeesport.
McGettigan, Daniel L., Capt., 656 Miller Ave., Pittsburgh.
McLaughlin, James T., Major, 409 Oakland Ave., Pittsburgh.
Manges, Lewis C. Jr., Lt. Col., 3321 W. Penn St., Philadelphia.
Mango, Albert E., Major, 436 E. 6th St., Erie.
Martin, Josef E., Major, 265 N. Maple St., Kingston.
Maser, Morris M., Capt., 1634 N. 15th St., Philadelphia.
Myers, Charles E., Major, 345 Rutter Ave., Kingston.
Newman, William H. Jr., Major, 120 Nelson St., Clark's Green.
Petraglia, Angelo A., Major, 104 N. Graham St., Pittsburgh.
Putnam, H. M., Major, Childrens Hosp., 18th & Bainbridge, Philadelphia.
Pyne, James A., Major, 424 Wyoming Ave., Wyoming.
Ramsey, James P., Major, 1528 Christian St., Philadelphia.
Rice, Dale A., Lt. Col., 537 Walnut St., Meadville.
Rushbridge, Harold W., Major, 430 Ella St., Wilkinsburg.
Rybachok, Taras H., 1st Lt., 756 N. 22d St., Philadelphia.
Selickman, Mitchell A., Capt., 1951 72d Ave., Philadelphia.
Smith, Joseph G., Capt., 23 N. 2d St., Sunbury.
Snyder, Charles P. Jr., Major, Manor Park Bldg., Manor.
Stegura, Barney A., 1st Lt., 630 S. Hanover St., Nanticoke.
Stein, Arthur J., Capt., 1431 W. Diamond St., Philadelphia.
Tate, Fred J., Capt., 751 N. 7th St., Allentown.
Thomas, Eugene L., Capt., 4856 N. B St., Philadelphia.
Ulrich, Samuel D., Lt. Col., 51 N. 39th St., Philadelphia.
Weyland, James G. M., Lt. Col., 1280 Park Place, Beaver.
Yingling, Paul L., Major, Main St., Shipperville.

Rhode Island

Arlen, Richard S., Capt., 359 Broad St., Providence.
Beaudoin, Louis I., Capt., 16 Armistice Blvd., Pawtucket.
Frassace, John, Capt., 23 Joslin St., Providence.
Grover, Morris L., Major, 500 Elm Grove Ave., Providence.
Jones, Walter Smalley, Major, 165 Waterman St., Providence.
Lewis, Luther R., 1st Lt., 270 Benefit St., Providence.
Mills, Parker, Capt., 266 Smith St., Providence.
Nevitt, Francis, Capt., Providence.
Squillante, Orlando J., Major Warren.

South Carolina

Asbill, David St. P., Capt., 425 N. Edisto Ave., Columbia.
Bolgia, Julius H., Capt., Spartanburg, GH, Spartanburg.
Hair, Joseph T., Capt., Aiken.
Hamilton, Alfred T., Major, 517 North St., Chapel Hill.
McConnell, Harvey E., Capt., 124 Church St., Chester.
Scott, James E. Jr., Capt., 11 Logan St., Charleston.
Scott, William S., Capt., 166 Alabama St., Spartanburg.
Seastrunk, Jesse G., Capt., 613 Henderson St., Columbia.
Smith, Bachman S. Jr., Capt., 65 Gibbs St., Charleston.
Whitworth, Horace M. Jr., Major, 21 Sevier, Greenville.

Tennessee

Blackwell, Samuel J., Major, 791 McConnell, Memphis.
Brasfield, John A., Capt., Dresden.
Brown, Robert L., Major, 500 Harlan Ave., Jellico.
Burch, John C., Col., Tyne Blvd., Nashville.
Bush, Douglas M., Major, 3625 Hanover St., Dallas.
Caudill, Estill L. Jr., Capt., Oaklawn, Elizabethton.
Christenberry, Henry E. Jr., Capt., 501 W. Church, Knoxville.
Ehlen, James G., Capt., 3024 Kingston Pike, Knoxville.
Hamilton, James L., Lt. Col., 1810 Crestwood Dr., Chattanooga.
Hay, Floyd B., Capt., Byrdstown.
Hutton, Vernon Jr., Major, Nashville General Hosp., Nashville.
Johnson, David F., Major, Nashville College, Madison.
Lillard, John H., Capt., Benton.
McClary, Spencer B. Jr., Capt., Etowah.
McCoin, Joseph, Capt., 112 Tennessee Ave., La Follette.
McCown, Oswald S. Jr., Capt., 2 Parke Ave., Germantown.
Malcolm, William B., Major, Dandridge.
Myhr, Lamb B., Capt., Bellevue.
Patterson, Robert C., Major, 1912 Linden St., Nashville.
Prevo, Samuel B., Major, 1710 S. Parkway East, Memphis.
Reeser, Archibald W., Capt., Church Hill.
Rhea, Hal S., Capt., 655 S. Belevvedere, Memphis.
Ruffin, James S. Jr., Major, 820 Temple Ave., Knoxville.
Satterheld, William T., Lt. Col., 1320 Lamar Ave., Memphis.
Shapiro, John L., Capt., 2006 Acklen Ave., Nashville.
Shelton, George W., Col., Box 183, Manchester.
Snap, Landon B. II, Capt., 1714 Windsor Ave., Bristol.
Tharp, George W. Jr., Major, 616 Arrowhead Dr., Knoxville.
Welch, Julian K. Jr., Capt., 1016 Jackson Ave., Memphis.
West, Jasper D., Lt. Col., 786 N. Evergreen St., Memphis.
Witherington, James B., Major, Millington.
Zirkle, Charles R., Capt., Kingston.

Virginia

Booker, Daniel C., Major, St. Elizabeth's Hosp., Richmond.
Booker, James M., Capt., Med. Coll. of Virginia, Richmond.
Duncan, George A., Lt. Col., 300 Wainwright Bldg., Norfolk.
Horsley, Guy W., Lt. Col., 500 St. Christopher Rd., Richmond.
Low, James R., Capt., Welcome, King George County.
Malkin, Samuel H., Major, Oak St., Bedford.
Mitchell, Edward A., Capt., Box 282, Clinchco.
Phillips, Joseph T. Jr., Capt., 311 Wainwright Bldg., Norfolk.
Potter, Richard C. Jr., Capt., Lee St., Marion.
Robinson, Dennis H., Capt., Bedford.
Scott, Robert J., Capt., 5 Parker St., Onancock.
Selden, Thomas W., 1st Lt., 800 Avenue A, Norfolk.
Spencer, Roger R., Capt., 600 Monroe St., Lynchburg.
Watkins, William R., Major, S. Boston.
Williams, John P., Col., 828 W. Franklin St., Richmond.

Washington

Baskin, Lester S., Capt., 905 N. Tacoma Ave., Tacoma.
Bell, Allan B., Capt., 510 Birth St., Shelton.
Brown, Ralph C., Capt., 2301 Columbia, Olympia.
Cooley, Percy P., Major, Monroe.
Dalinkus, Albert G., Capt., Sacred Heart Hosp., Spokane.
Frewing, Harry L., Major, 201 W. 37th St., Vancouver.
Goss, Harold L., Col., 4502 E. 33d St., Seattle.
Humiston, Homer W., Major, 3411 N. 24th St., Tacoma.
Jessup, Horace S., Capt., 18th & Laurel, Port Angeles.
Kimball, Charles D., Capt., 3804 E. Highland Dr., Seattle.
Low, Joseph H., Capt., 1025 Naches Ave., Yakima.
Miller, Richard R., Lt. Col., 5634 35th Ave. S.W., Seattle 6.
Qualheim, Clarence B., Capt., 3450 38th Ave. S.W., Seattle.
Tupper, James A., Capt., 2733 33d So., Seattle.
Vukov, Silvio J., Capt., 3850 17th Ave. S.W., Seattle.
Walker, John H., Capt., 513 N. G St., Tacoma.

Hawaii

Metz, Harland I., Capt., Wilcox Hosp., Lihue, Kauai.
Vasconcellos, Arthur L., Capt., Queen's Hosp., Honolulu, Oahu.

ORGANIZATION SECTION

Postwar Medical Service

MEETING OF SEPTEMBER 22

The meeting of the Committee on Postwar Medical Service was called to order by the Chairman, Dr. Ernest E. Irons, in the Board of Trustees Room of the American Medical Association Building at 10 a. m. Saturday, September 22. The following members, liaison members and guests were present:

Dr. Irvin Abell.	Col. B. R. Kirklin.
Dr. Louis H. Bauer.	Dr. Herman L. Kretschmer.
Lieut. Col. Robert D. Bickel.	Dr. Roger I. Lee.
Dr. Walter L. Bierring.	Major Gen. George F. Lull.
Dr. Francis G. Blake.	Col. Hugo Mella.
Dr. Frederick A. Coller.	Dr. J. J. Moore.
Mr. Graham L. Davis.	Dr. Walter W. Palmer.
Major Gen. Warren F. Draper.	Dr. Carl M. Peterson.
Capt. William E. Eaton.	Lieut. Col. William N. Piper.
Lieut. Col. Bryan C. T. Fenton.	Father Alphonse M. Schwitalla, S.J.
Dr. Morris Fishbein.	Dr. R. L. Sensenich.
Major Gen. Paul R. Hawley.	Dr. H. H. Shoulders.
Dr. E. L. Henderson.	Dr. LeRoy H. Sloan.
Mr. Thomas A. Hendricks.	Dr. Austin E. Smith.
Mr. J. W. Holloway Jr.	Mr. Barry C. Smith.
Dr. Ernest E. Irons.	Miss Mary Switzer.
Dr. Victor Johnson.	Dr. Olin West.
Dr. Edwin P. Jordan.	Dr. Fred C. Zapffe.

The minutes of the meeting held on June 23, 1945, were approved.

The Chairman presented the regrets of Dr. Evarts A. Graham, Dr. Arthur W. Allen and Dr. James E. Paullin that they were unable to attend the meeting. Major Gen. Warren F. Draper, Deputy Surgeon General of the U. S. Public Health Service, who had been on overseas duty for the past year, resumed his place as a member of the Committee, and he, Dr. Roger I. Lee, President-Elect of the American Medical Association, who served as first chairman of the Committee, and Major Gen. Paul R. Hawley, recently appointed as head of the Medical Department of the Veterans' Administration, were welcomed.

A letter of resignation as liaison member of the Committee between the Office of the Surgeon General of the Army and the American Medical Association was presented from Lieut. Col. Harold C. Lueth. Colonel Lueth's resignation was accepted with regret and with appreciation of his services. It was announced that Lieutenant Colonel Piper would henceforth represent the Personnel Service of the Surgeon General's Office.

BUREAU OF INFORMATION

Lieut. Col. Robert D. Bickel, Liaison Officer, presented the following report:

The main energies of the Bureau of Information recently have been exerted toward getting in hand completed county summary sheets from all the states and establishing a reporting system by means of which the summary sheets can be kept up to date. It also has been necessary to arrange a uniform system of handling correspondence, which is becoming increasingly heavy. Problems having to do with medical education and postgraduate training are being referred to Dr. F. H. Arestad of the Council on Medical Education and Hospitals and those dealing with Council on Legal Medicine and Legislation. Correspondence regarding the Bureau of Legal Medicine and Legislation. Correspondence regarding locations or the establishment of a practice are answered by the Bureau of Information from material on file in the Bureau.

As of Sept. 1, 1945 the returns of county summary sheets were complete from twenty-four states, returns from twenty-one states were partially complete and no returns whatever had been received from four states. A total of 2,357 county summary sheets have been received, leaving 716 still outstanding. Every effort is made to insure the accuracy of all entries on the summary sheets, and when inquiries are received from medical officers duplicate sheets for the areas concerned are filled out and forwarded. It has been the consistent policy of the Bureau of Information in corresponding with officers of state medical societies to stress the fact that the Bureau is not a placement agency and has no desire to send physicians into any area or community where places are being held open for men still in service.

Information concerning areas in need of physicians and specialists is on file in the Bureau as well as are the names of specialists seeking locations. There is also a file of industrial positions available and a file

of pertinent current editorials and articles. In order that the data on file with respect to the distribution and need of physicians may be kept up to date an effort has been made to secure from each state medical society monthly listings of areas of need, and, in addition, a questionnaire has been mailed to each civilian physician in the country the return of which it is hoped will make possible the correction of existing data and will insure more accurate information.

An analysis of the correspondence received in the Bureau shows that, up to September 1, 213 physicians have written for information concerning locations in which to establish a practice; 85 communities or industries have requested help in finding a physician to relieve critical need; 110 communications have been received covering matters related to medical education, 81 pertaining to legal matters, and 65 completed county summary sheets have been given to office visitors.

The Information Bulletin for Medical Officers, which was presented to the Committee in galley form at the June meeting, has been distributed in the following manner: 50,000 copies were sent to the *Bulletin of the U. S. Army Medical Department*, 13,300 to the Bureau of Medicine and Surgery of the Navy and 1,800 to the Surgeon General of the U. S. Public Health Service. Approximately 3,000 copies have been sent to individuals, and as soon as shipping instructions are received 4,000 copies are to be forwarded to the Army Medical Library. The total number of copies printed was 76,100.

In reply to questions by Miss Switzer as to the number of medical officers who inquire about going into needy communities, Colonel Bickel stated that most of the inquiries were received from men who want to change locations and in doing so want to go where there are good hospital and laboratory facilities; they are not desirous of going into small rural communities where much travel would be necessary and good hospital facilities are lacking. Miss Switzer stated that the Procurement and Assignment Service is much concerned with the pressure from needy communities themselves, from Congress and others with respect to the maldistribution of physicians, which has almost reached crisis proportions; that an attempt should be made to work out a solution of the situation with the help of the state medical societies and state procurement and assignment committees, and that hospitals having available residencies should try to encourage the men coming back to practice—particularly the younger men—otherwise the maldistribution will be worse than it was during the war not only factually but from the point of view of public relations. Miss Switzer further stated that the South and some parts of the Middle West were most vitally concerned but that the communities most seriously in need of medical service were in Pennsylvania and perhaps in Indiana, and that a concerted effort to attract physicians to practice was being made by some of the Southern states through appropriation of money by state legislatures. Father Schwitalla asked what the Bureau of Information might be able to do in this matter, and Colonel Bickel replied that the plan of the Bureau has been to inform inquiring veterans as to where there is a need for a physician and to refer them to the state medical society concerned for further help, and that his contact had been mostly with men who do not expect to return to their former locations or had not been in practice before entering the armed forces and are anxious primarily to obtain certification by a specialty board before making definite plans for location and are determined to get such certification before doing anything else. Practically all of them want to obtain residencies at the more well known medical institutions; they don't want to go to the smaller hospitals, although a concentrated effort has been made through the Bureau of Information to tell such men where there is need for physicians to practice. The fact that the Bureau does not operate an actual placement service but works through local medical societies makes it difficult to do anything more than that.

Miss Switzer remarked that in many communities there seems to be great resistance on the part of the state and county societies to the admission of new men, this resistance seeming to stem from the idea that the places of men now in service should be kept open against their return.

Dr. West discussed the problem and stated that another matter having direct bearing on it was the almost insurmount-

able difficulty of securing office space in many of the larger cities and towns, and that the Editor of *THE JOURNAL* has it in mind to make an appeal to the profession generally through the columns of *THE JOURNAL* to share their office facilities with the returning officers until more office space is available.

The Chairman emphasized the point that the Bureau of Information is not meant to be and cannot be a placement bureau and that the states and counties have and should have the opportunity and the responsibility in the matter. Dr. Fishbein also contributed to the discussion, saying that the majority of the officers who would be released between now and June would be the older men, who would undoubtedly return to their former locations, and that it is the younger men who have never practiced who will want satisfactory residencies and continued education. Colonel Piper said that the separation plans now call for the automatic release of the older men and that the younger men would very likely be held in service a little longer. Colonel Bickel's opinion was that, since so many of the physicians in service want some training before going back to practice and so many are willing to practice if they can get their training, the most important thing to do is to concentrate on a residency and training program. A medical officer who has been doing only administrative work for a number of years is hesitant to meet competition without further training.

General Draper mentioned newspaper articles quoting Surg. Gen. Thomas Parran and Col. W. Paul Holbrook which would seem to have an important bearing on this problem if the suggestion for utilizing civilian hospitals and physicians in the care of veterans and the idea of establishing large, central hospitals with smaller hospitals and contingent facilities radiating therefrom should be adopted. Mr. Barry C. Smith, director of the Commonwealth Fund, told the Committee that the Commonwealth Fund had maintained for a long time a fellowship program whereby medical students were educated under an agreement that on completion of internships they would go to practice in rural communities, but that many of the men tended to avoid the very districts where they were most needed, a few failed to keep the agreement entirely and many left rural practice after the initial three year period. He thought this of interest in connection with a proposal that the Army be asked to release physicians on condition that they go to practice in needy communities.

The report on the Bureau of Information was accepted and publication authorized.

LOCAL PLANS FOR ASSISTANCE TO RETURNING MEDICAL OFFICERS

The Chairman announced that the Board of Trustees of the American Medical Association had authorized the acceptance for publication in *THE JOURNAL* free of charge of advertisements by medical officers seeking locations. (See *THE JOURNAL*, October 6, p. 450.)

Dr. Abell stated that in Louisville, Ky., a survey of available office space had been made, that some physicians had offered to share their own office space, that every full time and part time state and county health department and hospital staff opening was being noted, and that a fund to provide loans to returning medical officers if needed was being raised. Dr. West stated that the Medical Society of the State of Pennsylvania and several of the larger county medical societies are raising loan funds for veterans. Miss Switzer stated that the Kansas Medical Society had established such a fund. (Other medical associations that have made or are making definite plans along these lines are the Connecticut State Medical Society, which is setting up a Service Bureau; the Medical Society of Delaware; the Indiana State Medical Association; the Louisiana State Medical Society; the Massachusetts Medical Society, which has under consideration the establishment of a postwar loan fund; the Medical Society of the County of New York, which has formed a medical veterans' aid fund, and the Columbus, Ohio, Academy of Medicine with a veterans' collateral pool fund.)

EDUCATIONAL INTERNSHIP AND RESIDENCY OPPORTUNITIES

Dr. Victor Johnson, Secretary of the Council on Medical Education and Hospitals, presented the following statement:

The Sept. 29, 1945 issue of *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* will contain a revised list of residency places in approved hospitals. In this list there are approximately 2,000 approved residency

positions in excess of the numbers available in approved hospitals before the war. It is anticipated that there will be a great demand for this information, so that a large reprinting will be made. As hospitals continue to plan expansion in their residency offerings, the list of approved residencies will be revised. A large number of requests for information of this kind has been received in the headquarters of the Council on Medical Education and Hospitals. To facilitate supplying desired information, the Council is establishing with hospitals a reporting system by means of which data on existing vacancies will be kept up to date. The Council's publication of "Postgraduate Continuation Courses for Veteran and Civilian Physicians" has been widely sought by returning medical officers. Over 1,000 copies of this reprint have been distributed already, and another large reprinting has been made.

Colonel Fenton gave an outline of the training program in force in the regular Army. He said that the majority of the officers of the Army Medical Corps during the wartime period had been placed in administrative positions and that the Army now was attempting to train them for manning the Army hospitals so that the A. U. S. officers might be released to civilian life. He further stated that the Army had a more far reaching program which would provide further training for its regular Medical Corps officers looking toward certification by various specialty boards and that in this program the cooperation and help of the Committee on Postwar Medical Service and its cooperating members would be greatly appreciated. He stated further that a somewhat larger regular Medical Corps is expected to be maintained in the future, that the plan at the present time is for the integration of the A. U. S. officers all along the way, that if possible men over 40 years of age would not be included, that it is hoped the majority will be 35 or under, that present A. U. S. officers are constantly inquiring about getting into the regular Army Medical Corps and that the War Department is now working on a policy.

Dr. Johnson commented that all who have been concerned with providing educational opportunities for returning medical officers are greatly appreciative of the interest the Army and Navy has taken in the problem and that the task they are now attempting to carry through will assist civilian hospitals materially in providing what the men want.

Dr. Zapffe brought up the question of the difficulty encountered by medical officers who are graduates of unrecognized medical schools in getting into registered hospitals. Colonel Piper believed that there are about 400 officers who are graduates of unrecognized schools, and Dr. Johnson stated that nothing much could be done, since many of the states require that a resident physician in a hospital must be licensed to practice in the state. There was continued discussion, after which Dr. Johnson's report was approved and publication authorized.

ENROLMENT OF MEDICAL STUDENTS

The following report was presented by Dr. Victor Johnson:

The cessation of hostilities with Japan has not altered the position of the Selective Service System, the Army or the Navy regarding the deferment of qualified premedical students and the return of qualified men now on active duty in the Army or the Navy to continue premedical or medical studies. However, the Senate recently referred the Downey resolution (No. 134) to the Senate Military Affairs Committee. Among other things this resolution calls for an investigation into the supply of medical students in the immediate future. Col. W. Paul Holbrook of the Air Surgeon's Office has been secured by the Senate committee to conduct the investigation. Conferences and correspondence between Colonel Holbrook and the Secretary of the Council on Medical Education and Hospitals have taken place, and it is hoped that appropriate action along the two lines mentioned may be forthcoming. Such action is still necessary, even though hostilities have ceased, because inductions are continuing and the younger men will probably be the last to be discharged from active duty, so that the acuteness of the shortage of qualified medical students continues. At the request of the Inter-Agency Committee on Deferments, the Procurement and Assignment Service is also studying the question of the supply of premedical students. Should it be demonstrated that inadequate numbers of veterans will be available to fill the 1946 classes to peacetime capacity, the Inter-Agency Committee has indicated that it may reconsider its deferment policies.

In the ensuing discussion Miss Switzer stated that the Procurement and Assignment Service had made a great effort to secure the concurrence of Selective Service in the deferment of premedical students, that General Hershey feels that such students should be procured from the veteran group, that there is an interdepartmental committee which has the authority to say which men shall be deferred, that it finally was agreed that an attempt would be made through publicity and other means to acquaint Army and Navy men with the need for premedical students and to put the men in touch with the schools.

and that if there was no material improvement in the situation through these efforts the matter would come up again in October. Father Schwitalla mentioned that he had accepted appointment as a "premedical adviser" for the separation center at Jefferson Barracks, Missouri, and that the number of possible candidates for premedical study is extremely small.

Dr. Johnson's report was accepted and publication authorized.

SURPLUS MEDICAL AND HOSPITAL SUPPLIES

Father Schwitalla, Chairman of the Subcommittee on Surplus Medical and Hospital Supplies, requested Miss Switzer to make the report for the Subcommittee, which she did as follows:

Mr. Symington has been appointed Surplus Property Administrator, and a beginning seems to have been made. The Advisory Committee to the Administrator was appointed last week in the hope that it may be of assistance in setting up standards of need necessary for our guidance. The Surplus Property Board has transferred certain funds for planning an orderly procedure. Machinery will be needed to determine eligible claimants, price differentiation and areas of need. Both the Public Health Service and the Office of Education are assembling staffs which will be well under way within the next thirty days. The Administrator's office expects to coordinate the two and keep standards somewhat similar.

Four members of the Subcommittee on Surplus Medical and Hospital Supplies are members of the Advisory Committee, namely Dr. Irons, Dr. Tishbein, Father Schwitalla and Miss Switzer.

The organizations asked to name representatives on the Advisory Committee are the American Medical Association, the American Dental Association, the American Hospital Association, the American Public Health Association, the American Pharmaceutical Association and engineering groups. It probably will be felt that some representatives of industry will be needed. This is strictly a professional committee to rely on for suggestions as to standards, degrees of need, and so on.

The Chairman presented a letter addressed to the Secretary of the American Medical Association by Dr. A. S. Fernando of Manila, who is attempting to revive the Philippine Medical Association, of which he was secretary-treasurer for many years, and to rehabilitate the University of the Philippines, whose buildings were practically razed. (Dr. Fernando wrote that the library of the Philippine Medical Association was completely burned and that the Bureau of Science housing the Scientific Library, which was reputed to have the best and largest collection of medical publications in the Far East, is now only rubble and ashes.) Dr. Irons stated that the Board of Trustees of the American Medical Association had referred Dr. Fernando's communication to the Committee on Postwar Medical Service. What the Committee might do in the way of assistance to the medical profession in the Philippines was discussed at length, and the following statement was adopted for transmission through Miss Switzer to Hon. Paul V. McNutt, recently appointed High Commissioner to the Philippines.

The Committee on Postwar Medical Service wishes to extend to Hon. Paul V. McNutt in his capacity as High Commissioner to the Philippines its support for any program which he may develop for the use of surplus supplies or materials to help in the Philippine situation.

Miss Switzer was requested to report back to the Committee at its next meeting.

VETERANS ADMINISTRATION

The Chairman stated that the setup of the Veterans Administration had been changed since the subcommittee of the Committee on Postwar Medical Service had been at work, that General Hawley, present at this meeting, would have charge of the medical functions in the Administration, and that the Committee will be delighted to be of service to the Veterans Administration as it is now and as it will be constituted.

Father Schwitalla, chairman of the subcommittee dealing with the Veterans Administration, stated that General Hawley would present to the committee the modifications that have been recommended by the Veterans Administration and the outline, content, and so on of a new bill which might be called the Administration's own bill and which will undoubtedly mean the withdrawal of the old bills that provided for the organization of a medical corps in the Veterans Administration.

General Hawley then presented a concise outline of a bill being drawn for presentation to Congress providing for the reorganization of the Veterans Administration and made particular reference to certain sections having to do with a Department of Medicine and Surgery, as follows:

The bill provides for a Department of Medicine and Surgery to consist of an Office of the Surgeon General, a Medical Corps, Dental Corps and Nurse Corps and an Auxiliary Corps to provide for allied sciences.

It provides for a Surgeon General to be appointed by the President for a four year term, a Deputy Surgeon General and eight Assistant Surgeons General, one of whom shall be from the Dental Corps and will be chief of that corps. The Surgeon General shall be a qualified doctor of medicine. The Auxiliary Corps shall consist of pharmacists, physical therapists, dietitians, occupational therapists and other scientific personnel including bacteriologists, pathologists, chemists, biostatisticians and medical and dental technologists. The Auxiliary Corps shall further include non commissioned personnel to be appointed without regard to civil service laws. The several corps shall each include a reserve corps.

All persons appointed in the Department of Medicine and Surgery must be citizens of the United States of America, and those appointed in the Medical Corps must be persons holding the degree of doctor of medicine from a college or university approved by the Administrator of Veterans' Affairs who have completed internships in an institution satisfactory to the Administrator and who have been licensed to practice medicine in one of the states or territories or in the District of Columbia.

The bill provides for promotion by length of service and examination. Grades below those of Surgeon General and Deputy and Assistant Surgeons General are comparable to Army grades from colonel down. Disciplinary boards to determine charges of ineptitude or misconduct are provided for. Within the restrictions imposed in the bill, the Surgeon General may rate any officer of the Department of Medicine and Surgery as a medical, surgical or auxiliary specialist. He may rate as specialists only those who are certified by an American specialty board. Any officer rated as a medical, surgical or auxiliary specialist shall receive 25 per cent higher pay. This is an incentive to do better work. Retirement pay is comparable with Army regulations.

The bill provides authority for the President to declare the Department of Medicine and Surgery a part of the military forces in time of war. It provides for medical and dental service for members themselves and, when available, for their dependents the same as in the Army and Navy, and it also provides for rotation of personnel into the Army and Navy for exchange of ideas and graduate instruction. The Administrator of Veterans' Affairs is authorized to place personnel on duty in schools of the Army, Navy and Public Health Service and in civilian institutions to increase knowledge. A broad section authorizes the Administrator to employ other personnel in addition to professional personnel, sets up a medical advisory council and gives it status under the law to advise the Administrator through the Surgeon General on medical policies.

After extended general discussion, in which it was brought out by Dr. Shoulders that the Committee on Postwar Medical Service had at its meeting held on March 17, 1945 endorsed the intent and provisions of the Rogers bill (H. R. 1661), the Committee voted to empower the subcommittee to withdraw the Committee's endorsement of the Rogers bill and to act on endorsement or nonendorsement of the new Veterans Administration bill described by General Hawley when it is presented to Congress. The consensus was that the bill as described by General Hawley would merit the complete support of the Committee on Postwar Medical Service and the medical profession generally.

Father Schwitalla offered a brief report for the Subcommittee to Confer and Cooperate with the Veterans Administration on Educational Opportunities for Veterans, stating that the Subcommittee hoped to see, before the next meeting of the whole Committee, Mr. H. V. Stirling, director of the Vocational Rehabilitation and Education Service, in order to obtain more information and statistics with respect to veterans who may be interested in acquiring a medical education and to determine, if possible, what is happening or will happen in the cases of veterans who serve as interns and residents in hospitals under the educational provisions of the G. I. bill with particular reference to those residents in hospitals that do not provide strong educational opportunities.

The Chairman stated that the Subcommittee to Confer and Cooperate with the Veterans Administration, consisting of Father Schwitalla and Dr. Collier, would be continued and a further report expected at the next meeting. He also said that the Subcommittee on Establishment of a Medical Corps in the Veterans Administration will be continued with the addition of Dr. Collier as a member.

DEMOBILIZATION OF MEDICAL OFFICERS

Dr. Collier, Chairman of the Subcommittee on Formulation of Lists of Medical Officers for Demobilization, requested General Lull to give the Committee such information as he could, and General Lull responded with the following statement: The machinery for discharge of medical officers is now working and a great many already have been discharged and returned to civil life, the bulk of the teachers requested by medical schools, if they were not overseas, have been discharged, those over 40 years of age or who entered service before Pearl Harbor will get out soon and the medical schools will have a very large

proportion of their teachers back before the first of the year—this is in addition to the normal demobilization; there will be excellent results in the next couple of months.

Dr Zapffe substantiated the statement of General Lull, further stating that medical schools do not seem to understand that the Army cannot release certain men it considers essential to its own needs. He also said that the Navy is working on lists of needed teachers now serving as Navy medical officers, and he was sure the matter is going forward as rapidly as possible.

Captain Eaton informed the Committee concerning a Navy Department directive covering discharge procedure for Navy officers, which became effective on September 15. He stated that most of the men requested by the medical schools are being released now as far as possible, particularly the ones in this country, and also those known as "hardship cases."

The Subcommittee was continued.

BUSH REPORT ON PROPOSED NATIONAL RESEARCH FOUNDATION

Dr Blake, Chairman of the Subcommittee to Study the Bush Report on a Proposed National Research Foundation, presented the Subcommittee's report. After discussion and amendment, the report was adopted and immediate publication authorized. (The report of the Subcommittee appeared in THE JOURNAL, October 6, p 466.)

WARTIME GRADUATE MEDICAL MEETINGS

The Chairman presented a letter from Dr F F Borzell, Chairman of the Central Committee of the Wartime Graduate Medical Meetings, in which it was stated that that committee had taken steps to terminate its activities on or before Dec 31, 1945, and the Chairman announced that the three organizations sponsoring the meetings—the American Medical Association, the American College of Surgeons and the American College of Physicians—had agreed to this procedure. On motion duly seconded and carried, the Committee on Postwar Medical Service concurred in this action.

Captain Eaton presented a comprehensive memorandum of the Bureau of Medicine and Surgery of the Navy, in which several new phases of the training of naval medical officers are outlined.

LICENSURE

Dr. Walter L Biering, Secretary of the Federation of State Medical Boards, presented the following report, which was approved and publication authorized:

A questionnaire comprising five items was sent to the state board of medical examiners in each state, the District of Columbia and the territories of Alaska, Hawaii and Puerto Rico. The questions and responses thereto are submitted herewith. (There was no response from Hawaii, and Massachusetts deferred its reply.)

1 What will be the attitude of your board toward medical officers desiring to relocate after separation from military service, who are graduates of an approved medical school?

Practically all of the state boards express a willingness to cooperate with the returning medical officer in facilitating relocation but do not indicate any intent to record credit for military service or to deviate from existing regulations of licensure by examination, reciprocity or interstate endorsement or by certification of the National Board of Medical Examiners. Three exceptions are noted.

New York: The State Department of Education has set up a special veterans' committee to pass on all applications of medical officers who are graduates of approved medical schools with a view to endorsing their previous licenses as far as possible.

Pennsylvania: The State Board of Medical Education and Licensure was instrumental during the recent general assembly in having an act passed whereby discretionary power is given the board to grant licenses to returning officers of the Medical Corps without examination. The board will adhere to the basic requirements under Pennsylvania law of a recognized medical school education and rotating internship. The act will remain in effect three years after the termination of hostilities. For those who are physically or mentally incapacitated during that period, the act will continue for five years after the cessation of hostilities.

North Dakota: Graduates of recognized schools who take a year's training in an acceptable hospital or college following dismissal from military service and present a satisfactory certificate from the Dean of said school will be granted a license without further examination.

2 What will be the attitude of your board toward those graduates of unapproved medical schools who have demonstrated their competence in connection with their military service. (It is assumed that there are about 150 such officers.)

Aside from the several exceptions noted later, the state boards will not accept graduates of unapproved medical schools for licensure regardless of military service.

Arizona: Not recognized heretofore but will receive special consideration at next meeting of the board on October 6.

Georgia: The board requires graduates of unapproved medical schools to attend an approved school for one year and certification of the same by the dean.

Illinois: Admits to licensure graduates of an unapproved medical school located in that state but not otherwise.

Massachusetts: Same as Illinois.

New York: The Veterans' Committee will pass on all such applications and, if they can show one or two years of military service during which time they have been actively engaged in medical or surgical work, the board will endeavor to admit them to the licensing examination. If they have not had active medical or surgical work while in the armed forces one year of attendance at an approved medical school will be accepted.

3 Early in the war a number of medical officers entered military service without obtaining licensure in any state. What will be the attitude of your board in such cases?

The Vermont State Board of Medical Examiners responds to this question by stating that such applicants will be licensed without examination if in active service in the armed forces two or more years, provided they meet the other requirements for licensure. All of the other state boards will require the regular licensure examination.

The certificate of the National Board of Medical Examiners is accepted in all but four states (Florida, Texas, Montana and Wisconsin).

4 Does your state provide for temporary licenses? If so, what is the procedure?

The following states provide for some form of temporary licensure.

Maine: Issues temporary licenses for relocation during the war only and six months thereafter.

Nevada: Temporary licenses will probably be discontinued at the next meeting of the board in November 1945.

New Hampshire: Issues limited licenses in special forms of practice as in radiology.

New Jersey: Issues temporary licenses during the war or other emergency for not less than two weeks or not more than four months.

North Dakota: Temporary licenses issued only during the war emergency.

Pennsylvania: Statutory provision for temporary licenses for the duration of the war and six months thereafter.

Puerto Rico: Temporary licenses for the period of the war and six months thereafter.

Washington: Temporary licenses issued during the war emergency at the discretion of the Director of Licenses.

Kansas, Louisiana, Mississippi, South Dakota and Virginia: Temporary licenses are issued until the next meeting of the board.

5 Does your state require a license for hospital residents? If so, what is the procedure?

California, District of Columbia, Illinois, Indiana, Kansas, Louisiana, Michigan, Minnesota, Nevada, Ohio, Oklahoma, South Carolina and Wisconsin require a license from a hospital resident.

Nebraska and Texas require a license if the resident engages in independent practice.

Rhode Island requires a license after one year of residency.

New Jersey requires a license after two years of residency.

Puerto Rico requires a license for resident, but said license is granted without examination.

SUMMARY

1 Medical officers who are graduates of an approved medical school desiring to relocate after separation from military service will be required to satisfy the peacetime licensure regulations in the states where they desire to locate with the exception of the states of New York, North Dakota and Pennsylvania, where special consideration is given to this problem.

2 Medical officers who are graduates of unapproved medical schools will experience difficulty in obtaining licensure in any state except Illinois and Massachusetts. Arizona, Georgia and New York appear willing to give special consideration to such applications. In this connection two additional requirements were suggested: (a) complete statement of medical military service of each applicant and certification of the same or (b) one year of attendance in an approved medical school after separation from military service and certification of the same by the dean. These were submitted to the state boards without bringing forth any special reaction or comment. It would appear that the next step in this problem should be taken by the two educational agencies, the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association.

3 Medical officers who entered military service without obtaining a license to practice in any state will evidently be required to take the regular licensure examination in the state concerned. Diplomates of the National Board of Medical Examiners will be exempt from these examinations wherever the certificate of the board is accepted. The Vermont board expresses also a liberal attitude toward such applicants.

4 Early in the war period there was a general expectation that provisions for temporary licensure would be established in most of the states but the opposition encountered by state licensing boards restricted the same to a limited number of states and then only for the duration of the war and six months thereafter.

5 In the states where a license is required for hospital residents a further inquiry will be necessary to ascertain the attitude of the respective state boards as to whether this requirement applies to medical officers carrying on their advanced training in hospitals approved for residences which might act as a barrier to such training. In the seventeen states and the District of Columbia having boards of examiners in the basic sciences certification by such boards is required before a license in medical licensure.

NEW BUSINESS

The Chairman and the Secretary were requested to prepare a report of the work of the Committee on Postwar Medical Service for presentation to the House of Delegates of the American Medical Association at its meeting to be held in Chicago December 3 to 6.

Colonel Bickel informed the Committee that he had received orders to close the Liaison Office of the Surgeon General of the Army that has been maintained at American Medical Association headquarters since October 1940. He expressed the appreciation of the Surgeon General for the splendid cooperation received, as well as his own sincere gratitude to all concerned who have been of assistance during the time he has been in charge as Liaison Officer. The Chairman thanked Colonel Bickel for his efforts and particularly for his excellent work in the conduct of the Bureau of Information.

Father Schwitalla presented a letter he had received from Dr. C. Willard Camalier, chairman of the War Service and Postwar Planning Committee of the American Dental Association, concerning surplus dental supplies that might be obtainable for the use of young dentists going into practice in needy areas. Action on Dr. Camalier's communication was postponed until the next meeting.

TIME AND PLACE OF NEXT MEETING

It was decided that the next meeting of the Committee would be held at American Medical Association headquarters, Saturday, Dec. 1, 1945.

The meeting adjourned at 1:15 p. m.

Washington Letter

(From a Special Correspondent)

Nov. 12, 1945.

Kelley Proposal on Artificial Limb Research Is Opposed

Champions of the Veterans Administration are none too pleased about the proposal of Representative Augustine B. Kelley, Democrat of Pennsylvania and chairman of the subcommittee on aid to the physically handicapped, that future government research on artificial limbs be centered in the U. S. Public Health Service instead of in the Veterans Administration. Major Gen. Paul R. Hawley, assistant administrator of veterans affairs in charge of medicine and surgery, has announced that the Veterans Administration would take over on January 1 all research now being done by the Army, Navy and National Research Council's prosthetic committee. Funds provided the Committee on Prosthetic Devices will run out at the end of the year, and the Veterans Administration plans to ask for an appropriation from Congress to continue research throughout the country and to carry on the \$500,000 in contracts with industrial laboratories now held by the committee.

Representative John E. Rankin, Democrat of Mississippi, chairman of the Veterans Committee, said that Mr. Kelley was mistaken in his opinion that the Board of Prosthetic and Sensory Devices, now a function of the Office of Scientific Research and Development, should be transferred to the Public Health Service instead of to the Veterans Agency. The Kelley committee has announced an eleven point program to guarantee proper provision of prosthetic devices for veterans, as follows: 1. That all skilled artificial limb workers be returned from military duty. 2. That the Veterans Administration provide limbs freely and from whatever source the veteran selects. 3. That procedure for securing limbs be simplified. 4. That the Federal Trade Commission police the artificial limb industry scrupulously. 5. That veterans be reimbursed for time lost because of unsatisfactory appliances. 6. That red tape of having men in charge of the Veterans Administration cared for by the War and Navy departments be overcome by contract arrangement. 7. That the federal government's obligation to undertake research until substantial improvement in prosthetic devices be made clear. 8. That any improvements created at federal expense should be free of royalty. 9. That the Department of

Justice should continue investigating antitrust violations in limb making. 10. That the federal government research be placed in the U. S. Public Health Service. 11. That the Board for Prosthetic and Sensory Devices and its committee work should be transferred at once to the Public Health Service.

No comment was immediately forthcoming on the statement in Chicago by Dr. Paul E. Klopsteg, chairman of the Committee on Prosthetic Devices of the National Research Council, that artificial limbs now being supplied veterans have seven major faults.

Bernard Baruch Endorses National Science Foundation

Elder statesman Bernard M. Baruch, adviser to presidents since Woodrow Wilson, fully endorsed legislation for a national science foundation in his testimony before the Senate Military-Commerce subcommittees considering bills to create a federally financed program to aid research. He declared it to be a fact that Germans and Japanese will strive through science to create the means of waging another world war, and he suggested these courses for a peacetime United States scientific program: 1. Greatly increased scientific brain power, using scholarships and other aids to develop new scientific talent in American youth. 2. Continued military research in developing new weapons for national defense. 3. Intensified scientific war against disease. 4. Offsetting depletion of natural resources. 5. Stimulation of basic scientific research. 6. Dissemination of scientific information as widely as possible. 7. Creation of a new, permanent government agency to coordinate activities into an integrated, national scientific policy.

President Truman insists that any scientific discoveries coming from federally financed research be public property. He outlined this position in a letter written by Reconversion Director Snyder to Senators Kilgore, Democrat of West Virginia, and Magnuson, Democrat of Washington, who are holding the joint hearings on a national scientific foundation.

Approval of Mental Health Institute by Subcommittee

Unanimous approval was given by a House subcommittee headed by Representative J. Percy Priest, Democrat of Tennessee, to the bill to establish a \$4,500,000 mental health institute in the District of Columbia. In testimony before the joint House Interstate and Foreign Commerce subcommittee, Mr. Priest had reported that the name of the proposed institute was changed from the National Neuropsychiatric Institute to the National Institute of Mental Health. On the suggestion of the Budget Bureau several changes have been made in the bill. An amendment would put the fund for research into a common U. S. Public Health Service treasury, earmarking the money for institute use. This would prevent wide open federal aid to private institutions, because under the Public Health Service the fund cannot be used to subsidize private hospitals.

Coming Medical Meetings

American Medical Association House of Delegates, Chicago, Dec. 3-6. Dr. Olin West, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, Chicago, Dec. 10-11. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Association on Mental Deficiency, Cleveland, Nov. 28-Dec. 1. Dr. Neil A. Dayton, Box 51, Mansfield Depot, Conn., Secretary.

American Society of Anesthetists, New York, Dec. 12-13. Dr. McKinnic L. Phelps, 745 Fifth Ave., New York 22, Secretary.

International College of Surgeons, U. S. Chapter, Washington, D. C., Dec. 7-8. Dr. Louis J. Gariepy, 16401 Grand River Avenue, Detroit, Secretary.

North Pacific Pediatric Society, Portland, Ore., Dec. 1. Dr. Aldis B. Johnson, Cobb Bldg., Seattle 1, Washington, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Nov. 26-29. Dr. Elmer R. Musick, 512 Medical Arts Bldg., Oklahoma City, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-16. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 4-6. Dr. Alfred Blacklock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Amendment of G. I. Bill of Rights

The Senate has passed H. R. 3749, with amendments, a bill to amend the G. I. Bill of Rights. As passed by the Senate, this bill, among other things, (1) eliminates the requirement in the existing law that veterans must show that education was interrupted by service in order to qualify for the educational benefits of the law, extends the time from two to four years within which a course must be initiated and extends the time within which education or training may be afforded from seven to nine years; (2) adds a provision for short, intensive courses under contract with approved institutions, with authority to pay more than the pro rata customary charges; (3) increases the subsistence allowances under the title relating to education from \$50 to \$65 a month in the case of veterans without dependents and from \$75 to \$90 a month in the case of veterans with dependents; (4) provides that any person while on terminal leave, or while hospitalized pending final discharge, may be afforded the benefits of the law relating to education and loans, and (5) extends the time within which veterans may apply for the guaranty of a loan to ten years after the termination of the war.

Social Security Act Amendments

A bill, H. R. 4551, introduced by Representative Jackson, Washington, proposes to amend the Social Security Act to provide for a National Social Insurance System under which would be made available to covered persons retirement, survivors and extended disability insurance benefits. Among other things, the Social Security Board, after consultation with the Surgeon General of the United States Public Health Service and the Office of Vocational Rehabilitation, would be authorized to make provision for furnishing medical, surgical, institutional, rehabilitation or other services to disabled individuals entitled to receive the extended disability benefits if such services may aid in enabling such individuals to return to gainful work.

National Mental Health Act

Representative Priest, Tennessee, has introduced H. R. 4512, to amend the Public Health Service Act to provide for research relating to psychiatric disorders and to aid in the development of more effective methods of prevention, diagnosis and treatment of such disorders.

Miscellaneous

Two new bills propose methods of prevention of stream pollution. S. 1462, introduced by Senator Barkley, Kentucky, provides for water pollution control activities in the United States Public Health Service and for federal aid in the form of grants-in-aid, loans or both to any state, municipality or other public body for the construction of necessary treatment works to prevent the discharge of untreated or inadequately treated sewage "into the surface or underground waters in or adjacent to any state." The other bill, S. 1536, introduced by Senator Kilgore, West Virginia, proposes to encourage the prevention of stream pollution by allowing amounts paid for plants for the treatment of industrial waste as a deduction in computing net income.

Two other bills have been introduced relating to the discharge of members of the armed forces who desire to resume their education or training. One bill, H. R. 4376, introduced by Representative Schwabe, Oklahoma, provides that there shall be released from active duty for the period of one year any member of the military or naval forces who applies for such release and submits with his application an affidavit of his intention to resume his education or training by enrolling in an educational or training institution. If at the end of that year the member submits satisfactory evidence that he has made passing grades in the institution which he has attended, he will be granted a certificate of honorable discharge. The other bill, H. R. 4511, introduced by Representative Gillie, Indiana, likewise provides for the discharge from the armed forces of any person who desires to resume his education or training, if his

education or training was impeded, delayed, interrupted or interfered with by reason of his entrance into the service. If any such person was not over 25 years of age at the time he entered the service he will be deemed to have had his education or training impeded, delayed, interrupted or interfered with. This bill, too, provides for the discharge of any person who desires to return to his business or profession which he was forced to discontinue or place in other hands at the time of his induction or enlistment into the military service.

Official Notes

NBC NETWORK BROADCASTS TO BE RESUMED

Beginning Saturday December 15 at 4 p. m. Eastern Standard Time (3 p. m. Central Standard Time, 2 p. m. Mountain Standard Time, 1 p. m. Pacific Standard Time) the American Medical Association will resume its nationwide dramatized radio health programs on the network of the National Broadcasting Company and associated stations. The broadcasts will run for twenty-six weeks.

The title for the network broadcasts will be "Doctors at Home," which will represent the sixth consecutive year of broadcasting under the general title "Doctors at Work," which was modified during the war years to "Doctors at War" and "Doctors Look Ahead." "Doctors at Home" will deal, as its title indicates, with the return of doctors from the war and their reabsorption and readjustment into life at home. Going back to the "Doctors at Work" formula, the programs will be in story form, continuous from week to week. The fictitious doctor who was the hero of "Doctors at Work" (Dr. Tom Riggs, who was several times mistaken for a real doctor instead of a radio character) will return from his military service and will resume his practice in a typical American town. Listeners will meet again Dr. Riggs's wife Alice and child, the rest of the Riggs family and their friends, and the doctors and citizens of the community among whom Tom finds his place as a rising young physician and a progressive citizen.

The fictitious story of Dr. Riggs will be used as a vehicle for dealing with modern medical advances such as new developments in drugs, advances in surgery, anesthesia, obstetrics and other branches of medicine. There will be a constructive attack on the problem of scarcity of physicians. How to choose a doctor, what to do until the doctor comes and other practical phases in health education will be part of the program.

Announcements will be carried in the radio columns of local newspapers. Locally, broadcasts may not be at the same time as the network broadcast, since many radio stations having a conflict between network programs and local time make a recording of the network program and broadcast it later in the day or even the next day.

APPOINTMENTS TO AMERICAN MEDICAL ASSOCIATION

Dr. William W. Bolton, who recently returned to the United States after service with the medical departments of the Ninth, Seventh and Third armies, has been appointed Assistant Director of the Bureau of Health Education. A graduate of Jefferson Medical College, Philadelphia, class of 1930, Dr. Bolton served with the Pennsylvania State Department of Health from 1935 to 1938, first as assistant director and later as director of the bureau of venereal disease control. Before entering the Army of the United States, he was on the staff of Yearbook Publishers, Chicago. Mr. George W. Cooley, since 1938 executive secretary of the Academy of Medicine of Toledo and Lucas County, has been named assistant to Mr. Thomas Hendricks, Secretary of the Council on Medical Service and Public Relations of the American Medical Association. Mr. Cooley will work on prepayment medical care plans. Mr. Cooley has served with the National Municipal League and the Cincinnati Regional Crime Commission. He is a graduate of the University of Cincinnati Post-Graduate School of Public Administration.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Personal.—Dr. Thomas Malcolm Blake has been named health officer of Winston County to succeed Dr. Hugh C. McRee, Hamilton, who resigned September 1. Dr. Marvin S. White, Hamilton, has been named to a similar position in Marion County also to succeed Dr. McRee.—Major Walter G. Haynes, M. C., has been appointed associate professor of neurosurgery and chief of the department at the Medical School of Alabama, Birmingham, effective November 1, newspapers report.

CALIFORNIA

Health Lecture Series.—The fall public relations program of the Los Angeles County Medical Association opened October 12 with a series of public health talks. The first session was devoted to "Penicillin—The Life Saving Miracle." The meeting October 19 was devoted to "The Truth About Venereal Diseases," October 26 "Preventive Medicine," November 2 "Modern Surgery" and "First Hundred Years of Anesthesia" and November 9 "Gifts of Modern Medicine." On November 16 "Blessed Events" was discussed.

Changes in Health Personnel.—Dr. Carl A. Scherer, Duluth, Minn., has been appointed health officer of the Sutter-Yuba Bi-County Health Unit, effective September 5. Before coming to California Dr. Scherer was for ten years health officer of St. Louis County, Minn., and director of Rural Health Unit 4 of the Minnesota State Board of Health.—Dr. Georgia N. Krusch, who has for the past year been head of the maternity and child care division of the Kern County Public Health Department, has been named director of a similar department for the King County (Wash.) Public Health Department.

ILLINOIS

Personal.—Robert D. Coghill, Ph.D., Peoria, has been appointed associate research director of Abbott Laboratories, effective November 1. Since 1939 he has been chief of the Fermentation Division, Northern Regional Research Laboratory, U. S. Department of Agriculture, in Peoria.

Chicago

Personal.—Mr. Ray E. Brown, formerly superintendent of the North Carolina Baptist Hospital, Winston-Salem, N. C., has been appointed assistant superintendent of the University of Chicago Clinics. He will be assistant to Dr. George Otis Whitecotton, superintendent.

Dudley Reed Retires.—Dr. Dudley B. Reed has retired at the University of Chicago School of Medicine with the title of professor emeritus of hygiene, department of medicine. Dr. Reed, who is health director of the university's student health service, retires under the age limit after thirty-four years service.

Course in Electrocardiographic Interpretation.—A course in electrocardiographic interpretation for graduate physicians will be given at Michael Reese Hospital by Dr. Louis N. Katz, Chicago, director of cardiovascular research. The class will meet each week starting Wednesday, February 13, for twelve weeks, from 7 to 9 p. m. Further information and a copy of the program may be obtained on application to the Cardiovascular Department, Michael Reese Hospital.

Class Endowment Fund Established.—A permanent endowment fund has been set up at the University of Chicago School of Medicine in the name of the class of 1944. The fund resulted from the proceeds from the sale of the first yearbook of the medical school, which was the activity of the class of 1944. According to the *Medical Alumni Bulletin* this establishes a precedent which, it is hoped, will inspire other classes to aid in placing the Medical Alumni Association on a permanently secure financial basis.

The D. J. Davis Lecture.—Dr. Carl E. Black, Jacksonville, Ill., will deliver the third annual D. J. Davis Lecture on Medical History at the University of Illinois College of Medicine, November 21. His subject will be "Medical Practice Before the Hard Roads." The Davis lecture series was established by the associates and friends of Dr. David J. Davis on his retirement

as dean of the college of medicine in 1943. Dr. Black is known for his collection of photographs of physicians, which has been given to the Illinois State Medical Society and which is being augmented through the work of Joseph Merante Jr., portrait photographer of New York (THE JOURNAL, March 3, p. 536).

MICHIGAN

Ninety-Four Years of Age.—Dr. Homer P. Mix, formerly of Riverside, observed his ninety-fourth birthday October 10 at the home of his daughter in Benton Harbor. Dr. Mix graduated at the Hahnemann Medical College and Hospital, Chicago, in 1880.

Harley Haynes Leaves University Hospital.—Dr. Harley A. Haynes has retired as director of the University Hospital, Ann Arbor, after serving in the position for twenty years. He has reached the automatic retirement age of the University of Michigan Medical School, Ann Arbor. Dr. Albert C. Kerlikowske, Ann Arbor, who graduated at the University of Michigan Medical School in 1923 and served his internship at the hospital, has been named director of the hospital to succeed Dr. Haynes.

New Tuberculosis Law.—On September 6 a new law covering the care of tuberculous patients in Michigan became effective. In this law, for the first time, treatment of tuberculosis is described as protection of public health, and the state or local health officer is empowered to arrange for treatment and care of persons who have the disease. This responsibility was formerly the duty of relief or welfare agencies, and the treatment of tuberculosis was considered a form of relief instead of a public health matter. One important change which will be brought about by the new law is that patients with tuberculosis no longer will be required to mortgage their securities to pay for hospital care or to make reimbursement.

Members of New Health Commission.—Dr. Charles F. Wagg, executive secretary of the former State Hospital Commission, has been named acting executive officer of the new Michigan Department of Mental Health, pending formulation and adoption of a permanent organizational structure. The new department, which was set up by the 1945 legislature, is now attempting to find a satisfactory candidate for the position of director of mental health. Members of the health commission created within the newly established department of mental health consist of the following: William J. Norton, Detroit, chairman, Mrs. Carl C. Blankenburg, Kalamazoo, Edward A. Bilitzke, West Branch, Dr. Raymond W. Waggoner, Ann Arbor, and Dr. Harry B. Zemmer, Lapeer. All activities of the State Hospital Commission are transferred to the new department of mental health, while the health commission shall be a body corporate within the department.

MONTANA

Dr. Cogswell Retires.—Dr. William F. Cogswell, Helena, executive secretary of the Montana State Board of Health, has announced his retirement, effective April 1, 1946. Dr. Cogswell joined the state board as secretary in 1912, coming from Livingston, where he had been health officer for Park County. According to *Montana Health*, Dr. Cogswell had planned to retire September 1 but extended the date to the expiration of his present appointment to give him additional time to complete a history of research on control of Rocky Mountain spotted fever. Dr. Cogswell graduated at Dalhousie University Faculty of Medicine, Halifax, in 1894. At a recent meeting of the board of health, Dr. David T. Berg, Helena, was named president, succeeding Dr. Roy V. Morledge, Billings, who becomes a member of the board. Dr. Richard C. Monahan, Butte, was named vice president.

NEW YORK

State Society Seeks Help in Compensation Expense.—The house of delegates of the Medical Society of the State of New York recently adopted a resolution pledging the society to take affirmative action toward having the state of New York assume a part of the financial expense, now borne entirely by county medical societies in New York, of administering the medical provisions of the workmen's compensation law. Dr. Joseph C. O'Gorman, Buffalo, in offering the resolution, pointed out that while the workmen's compensation law holds the county medical societies throughout the state responsible for licensing and supervising all compensation medical bureaus, it makes no provision for supplying the necessary funds to carry on the work. The action of the house of delegates paved the way for obtaining the required monies. The resolution expressed the view that all expenses incurred by

the county medical societies in this connection are costs properly chargeable to the administration of the entire workmen's compensation law. The resolution has application to fifty-seven of the sixty-one county medical societies throughout the state, the four in the Greater New York area being excluded, since the work referred to in the resolution is there performed by the state medical practice committee at the expense of the state.

Endowment Fund for Neuropsychiatry.—An endowment fund of \$2,153,954 has been established for a neuropsychiatric clinic at the University of Rochester School of Medicine and Dentistry, it was announced October 30. The fund is in addition to the building fund for the new structure, the cost of which is tentatively estimated at about \$600,000. Construction of the clinic is expected to start early in 1946 and it is hoped that the building will be completed within a year. The new structure will face Crittenden Boulevard adjacent to Strong Memorial Hospital and will be joined to the hospital by a corridor. It will be five stories high with a solarium on top and will contain physical and occupational therapy and recreational facilities for patients and ample laboratory space for active research and investigation. A committee of the medical school faculty has been surveying the field throughout the country to select a professor of psychiatry to head the clinic and help prepare plans for the facilities and staff organization. The clinic will be operated as a unit of the medical school and coordinated with the university's Strong Memorial and Municipal hospitals, the teaching hospitals of the school. It is contemplated that it will be used for the study and care of persons having functional nervous disorders rather than for those with extreme mental ailments. Provision will be made for beds for about 70 inpatients, and extensive use of the clinic for ambulatory patients is planned. Funds for the project were given by Mrs. Helen W. Rivas of LeRoy.

New York City

Course in Industrial Medicine.—The Long Island College of Medicine, Brooklyn, will conduct its fourth postgraduate course in industrial medicine January 14-February 1 under the auspices of the department of preventive medicine and community health. Instruction in the course will be intensive and practical and emphasis will be placed on health problems of workers under peacetime conditions. Morning, afternoon and evening sessions will be held each day during the three week period and lectures and seminars at the college will be supplemented by clinics and demonstrations in medical departments of cooperating industries, in various teaching hospitals and in governmental or other agencies active in the field. During the first week the program will be devoted to medical administration in industry, in the second week to internal medicine in industry and the occupational diseases and in the final week to industrial surgery. Provision will also be made for a limited number of those enrolled in the course to obtain subsequent additional supervised in-plant training in well established industrial medical departments. Additional information may be obtained from Dr. Thomas D. Dublin, professor of preventive medicine and community health at the medical school, 248 Baltic Street, Brooklyn.

"Model Unit" Set Up for Infantile Paralysis.—What is said to be a "model unit" for teaching and research has been started at Knickerbocker Hospital. The teaching and research aspects of the new service will be financed by a grant of \$100,000 from the National Foundation for Infantile Paralysis, while \$425,000 from the foundation's Greater New York chapter will pay for supply, equipment and treatment of patients. The new center is not intended to provide care for all paralysis sufferers in the city but will serve as a training center for professional personnel. When in full operation it will draw physicians from all over the country interested in treating the disease. It will give them the opportunity to study care of the disease under ideal conditions, to study the latest types of treatment. At present there are 19 patients, but 35 can be accommodated. The new unit is expected to make it possible to treat infantile paralysis cases in one hospital from the onset of the disease until final disposition instead of having patients attend several institutions at various stages of the disease for different treatment. Dr. Philip M. Stimson, associate professor of clinical pediatrics at Cornell University Medical College, New York, will direct the new service. He will be assisted by Dr. Dorothy B. Jackson, resident physician at Knickerbocker Hospital. In addition, the staff will include two physicians, five physical therapists, one occupational therapist, eighteen nurses, an executive secretary and several persons trained in the application of "hot packs." The new unit

will occupy the entire fifth floor of the hospital. Phases of treatment will include pediatric care, physical therapy, rehabilitation and occupational therapy, and orthopedic support and reconstruction.

OREGON

State Medical Election.—Dr. Stanley Lamb, Portland, was named president-elect of the Oregon State Medical Society at a meeting of the house of delegates in Portland September 1-2. Dr. Lansford M. Spalding, Astoria, is president. Other officers include Drs. James C. Hayes, Medford, Burton A. Myers, Salem, Raymond M. McKeown, Coos Bay, vice presidents; Thomas S. Saunders Jr., Portland, secretary, and Cecil J. Ross, Portland, treasurer. Dr. Frank R. Mount, Portland, is delegate to the American Medical Association, with Dr. Edward H. McLean, Oregon City, as alternate.

PENNSYLVANIA

State Medical Election.—Dr. Howard K. Petry, Harrisburg, was named president-elect of the Medical Society of the State of Pennsylvania at the annual meeting in Philadelphia October 23-24. Dr. William L. Estes Jr., Bethlehem, was installed as president. The society voted to increase its dues from \$10 to \$20, attributing the need to the fact that for the past four years it did not receive annual dues from an average of two thousand members engaged in military service.

Philadelphia

Isaac Starr Named Dean at Pennsylvania.—Dr. Isaac Starr, Milton Bixler Hartzell research professor of therapeutics, University of Pennsylvania School of Medicine, has been elected dean of the medical school, effective November 6. As dean, he succeeds Dr. William Pepper who is retiring with the title of dean emeritus. Dr. Pepper became a member of the medical faculty at Pennsylvania in 1899 and has served as dean for thirty-three years. Dr. Starr graduated at the medical school in 1920. He joined the teaching faculty in 1922 as instructor in the department of pharmacology, subsequently serving as assistant professor of clinical pharmacology and associate in medicine. He became Hartzell professor in 1933, being the first to hold this position, which was established through the will of the late Dr. Milton B. Hartzell, who also had been a member of the faculty. With his election as dean, he resigned from the Hartzell professorship and has been appointed professor of therapeutics.

SOUTH CAROLINA

State Medical Election.—Dr. James C. McLeod, Florence, was chosen president-elect of the South Carolina Medical Association at its house of delegates meeting in Columbia, October 3. Dr. William T. Brockman, Greenville, is president. Other officers include Drs. Enoch M. Dibble, Marion, vice president, and Dr. Julian P. Price, Florence, secretary-treasurer. Dr. Hugh Thomas A. Pitts, Columbia, is delegate to the American Medical Association. Actions taken at the meeting included the increase of the annual dues of the association from \$10 to \$20 to help raise more funds for the society's ten point program. (THE JOURNAL, June 17, 1944, p. 1505) and agreement to employ a public relations officer to act as "director of public relations and counsel" for the state association.

VERMONT

Conference on Social Welfare.—A symposium on public problems was a feature of the twenty-ninth annual conference of social welfare in Burlington, October 25-26. The theme of the meeting was Approaches to Social Security in Vermont. Dr. Frederick C. Thorne, director, Brandon State School, presided, and the following spoke:

Dr. Erval R. Coffey, Washington, D. C., medical director, U. S. Public Health Service.

Mr. W. Arthur Simpson, formerly director, Old Age Assistance Department.

Dr. Harold B. Pierce, professor of physiologic chemistry, University of Vermont College of Medicine, Burlington.

Dr. Charles F. Dalton, Burlington, executive secretary, state department of public health.

The Vermont Society for Mental Hygiene met next day, October 27, at the Fleming Museum, University of Vermont, Burlington, for the following program:

Rev. James L. Hall, Burlington, Don Bosco School.

Mr. Earle Wingate, Burlington, Training Opportunities Offered by Veterans Administration.

Mr. Francis S. Irons and Mr. Donald M. Ehdred, Burlington, of the state department of education, Some Psychologic Aspects of Civilian Vocational Rehabilitation.

A member of the Alcoholic Foundation, New York, Alcoholics Anonymous.

Dr. Robert V. Seliger, Baltimore, The Psychiatrist Looks at the Alcoholic Patient.

VIRGINIA

Course on General Medicine.—The department of medicine of the University of Virginia in conjunction with the Medical College of Virginia, Richmond, is planning to offer an intensive two week refresher course in general medicine every three months for the next year. These courses will comprise lectures, clinics, ward rounds, clinicopathologic conferences and round table discussions. The first course will be held December 3-15 at the University of Virginia, and any physician wishing further details should address Box 1725, University Station, Charlottesville, Va. Those desiring information about courses to be given by the Medical College of Virginia in March and September should address Dr. Jacques P. Gray, dean, Medical College of Virginia, Richmond.

GENERAL

New Journal on Blood.—In January the first issue of *Blood*—The Journal of Hematology will make its appearance. Dr. William Dameshek, Boston, is editor-in-chief, with Drs. Charles A. Doan, Columbus, Ohio, Thomas Hale Ham, A. U. S., Edgewood Arsenal, Md., Roy R. Kracke, Birmingham, Ala., Nathan Rosenthal, New York, and Maxwell M. Wintrobe, Salt Lake City, as associate editors. Dr. George R. Minot, Boston, is consulting editor. An advisory editorial board has been named from among ranking specialists to represent all aspects of hematologic work. International interest is assured through a board of foreign contributing editors. Editorial offices are at 25 Bennet Street, Boston, and business affairs will be in the hands of Grune and Stratton, 381 Fourth Avenue, New York, who will publish the journal. The Waverly Press, Baltimore, is the printer. The journal will be published bimonthly.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the week ended November 3 have been received from the division of public health methods, U. S. Public Health Service, as follows:

	Nov. 3 1945	Nov. 4 1944		Nov. 3 1945	Nov. 4 1944
New England			South Carolina...	1	1
Maine.....	4	2	Georgia.....	3	3
New Hampshire...	0	1	Florida.....	4	4
Vermont.....	2	0	East South Central		
Massachusetts...	20	8	Kentucky.....	1	9
Rhode Island.....	1	0	Tennessee.....	11	2
Connecticut.....	11	8	Alabama.....	3	0
Middle Atlantic			Mississippi.....	5	2
New York.....	41	145	West South Central		
New Jersey.....	13	17	Arkansas.....	3	0
Pennsylvania.....	13	34	Louisiana.....	6	2
East North Central			Oklahoma.....	3	0
Ohio.....	11	31	Texas.....	8	8
Indiana.....	8	5	Mountain		
Illinois.....	30	23	Montana.....	2	1
Michigan.....	7	24	Idaho.....	4	0
Wisconsin.....	43	7	Wyoming.....	0	0
West North Central			Colorado.....	4	0
Minnesota.....	8	12	New Mexico.....	2	1
Iowa.....	18	6	Arizona.....	1	0
Missouri.....	21	13	Utah.....	7	1
North Dakota.....	1	0	Nevada.....	0	0
South Dakota.....	1	1	Pacific		
Nebraska.....	8	4	Washington.....	4	9
Kansas.....			Oregon.....	1	2
South Atlantic			California.....	36	17
Delaware.....	1	2			
Maryland.....	9	16	Total.....	390	451
Dist. of Columbia	4	0	First 44 weeks:		
Virginia.....	3	8	1945 and 1944.....	12,342	17,888
West Virginia.....	1	4	Median, 1940-1944	8,713	
North Carolina...	2	18			

Award in Enzyme Chemistry.—The Paul-Lewis Laboratories Inc. of Milwaukee has established an annual award for highly important work in the field of enzymes and requested the American Chemical Society to administer the award in a manner similar to other awards administered by the society. At the recent board of directors meeting the proposal was accepted by the society. The award is to be made for the purpose of stimulating fundamental research in enzyme chemistry in the United States by young men educated in a college or university in the United States. The award is to consist of \$1,000 and a bronze medal (or diploma). An additional amount up to \$150 or as much thereof as necessary is available to the recipient toward traveling expenses to the national meeting of the American Chemical Society, at which the award will be presented. To be eligible, a nominee shall be a citizen of the United States and a graduate of a United States college or university, shall not have passed his thirty-sixth birthday on April 30 of the year of the award and shall have accomplished noteworthy research in enzyme chemistry. For the purpose of this award the presence of an enzyme

action must be unequivocally demonstrated in the nominee's work. Nominations for this award, as well as members of the award committee, are limited to noncommercial chemists. John J. Willaman, Ph.D., of the Eastern Regional Research Laboratory of the U. S. Department of Agriculture has been appointed chairman of the canvassing committee.

Government Services

Penicillin Distribution Unit No Longer Operating

All communications regarding penicillin should be addressed to the Chemicals Division, Civilian Production Administration, Washington 25, D. C. The Civilian Penicillin Distribution Unit, formerly accepting these communications, was closed in April 1945. Information has been received indicating that inquiries are still being addressed to the Distribution Unit, which is no longer operating.

New Director of Neuropsychiatric Services

Dr. Daniel Blain, New York, has been appointed director of neuropsychiatric services in the Veterans Administration. Dr. Blain, who is a commissioned officer in the U. S. Public Health Service Reserve, has been serving as psychiatrist with the War Shipping Administration. Commander Blain will direct the care of mental patients and also will supervise the establishment of additional mental hygiene clinics.

Richard Plunkett Named Field Consultant of Health and Sanitation

Dr. Richard J. Plunkett, Major, M. C., A. U. S., has been appointed field consultant for the division on health and sanitation, Institute of Inter-American Affairs. The appointment is part of the institute's plan to mold wartime cooperative advances in hemisphere health into permanent peacetime channels. Major Plunkett has already started a lengthy inspection and consulting tour which will take him to Bolivia, Chile, Uruguay, Peru, Ecuador, Colombia and the republics of Central America, according to an announcement.

Members Named to Surplus Property Unit

Hazen Dick, N. F. MacDonald and Carl E. Schwob, M.S., have been appointed by the U. S. Public Health Service to the staff of its surplus property unit. The unit, which is under the supervision of Dr. Joseph O. Dean, San Juan, Puerto Rico, senior surgeon, will assist the surplus property board in administering section 13 of the surplus property act, which gives special consideration to the needs of tax supported and tax exempt organizations for surplus property suitable for health protection use. Mr. Dick, who has been secretary of the council on administrative practice of the American Hospital Association, will serve as chief of the medical supply section. Mr. Schwob will be chief of the engineering section and Mr. MacDonald has been detailed to the hospital and medical fields in the office of surplus property.

Need for Pharmacists

There is a need for pharmacists in Veterans Administration and U. S. Public Health Service hospitals and dispensaries throughout the country. The entrance salaries are \$2,320 and \$2,980 per annum. Additional compensation is given for all authorized time worked over forty hours a week. Appointments to federal positions which are subject to the civil service rules and war service regulations are made through the U. S. Civil Service Commission. No fee is charged. Application may be made to the U. S. Civil Service Commission, Washington 25, D. C. Pharmacists who obtain an entrance salary of \$2,320 (P-1) act as pharmacist or assist the pharmacist in charge at a hospital or dispensary, compound doctors' prescriptions or other medicines, manufacture U. S. P. and N. F. preparations, keep narcotic records, maintain stocks and supplies and perform related work as required. A pharmacist who enters at \$2,980 (P-2) is in charge of a pharmacy in a hospital. Positions as narcotic agents (\$2,980 a year) may also be filled from the P-2 list of eligibles.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 13, 1945.

Improved Medical Services in Industry

Important recommendations for the training of medical officers, nurses and others concerned with the problem of health in industry are made in a report of the Education Committee of the Association of Industrial Medical Officers. The present facilities for the training of medical students are described as extremely scanty in London and not much better in the provinces. The report suggests that in the future all medical students should be trained to recognize that the daily occupation of a patient, the economic effect of illness and the necessity for restoring earning capacity are all important aspects of everyday practice. Students should also receive special training in accident surgery, attend lectures on occupational medicine and spend at least three days in a factory where they can learn about the normal work of the industrial medical officer. All teaching hospitals should have on the staff or available to them an industrial medical officer to give undergraduate instruction.

For postgraduates who intend to devote themselves especially to industrial medicine, a broad basic training in general medicine followed by special training of three types is recommended. These types are adapted respectively to the needs of the consultant and specialist in industrial medicine, the whole time industrial medical officer and the man who takes one of certain medical appointments, such as examining surgeon, or becomes a factory medical inspector. The committee also recommends the institution of a diploma in industrial health to be given by one of the royal medical colleges.

The training of nonmedical personnel is also recommended. Nurses should receive instruction, whole time or part time, to fit them for the important part they play in any industrial health plan. The social worker should have a wider training in industrial subjects, since she is the most important link between the hospital and industry. General education in health matters is also advocated for the staff and workers in industry—for the works manager, technicians, foremen, the workers themselves and especially the personnel manager, so that all can play an intelligent part in preventing accidents and disease.

The committee also recommends further academic appointments in industrial medicine. Already university posts of a higher type are being instituted at Manchester, Durham and Glasgow, which are great industrial centers. It is suggested that further appointments should be made at London, Birmingham and Liverpool universities.

A licensing body, the Society of Apothecaries of London, has instituted a diploma in industrial health. It will be open to physicians who have been engaged in whole time practice of industrial medicine for not less than two years, or in part time practice for not less than four years. The society understands that courses in the subject are to be held in the future. Subject to their fulfilling the society's regulations, they will be recognized as qualifying for admission to the examination.

Nazis' Last Plans for Poisoning the Invaders

A secret Nazi paper has been published by the United Nations War Crimes Commission. It reveals that a meeting of German chemical experts was held to discuss the means of poisoning the Allied invasion forces and of providing suicide tablets for the Germans themselves. These tablets were presumably used by Himmler and lesser Nazis. The paper is a report of the proceedings of a conference held under high auspices at an SS police institution in Berlin on Oct. 16, 1944.

Mobile Exhibition of Wartime Advances in Medicine

St. Mary's Hospital, where penicillin was discovered, has adopted a novel method of appealing to the public for funds required for rebuilding. This is an exhibition train of some of the wartime advances in medicine, which, starting from the Paddington terminus of the Great Western Railway, is touring the country. The coaches concerned were formally handed over to the chairman of the railway by Sir Almroth Wright, principal of the Institute of Pathology and Research of St. Mary's Hospital. Every stage in the production of penicillin is shown. DDT is exhibited not only as a destroyer of mosquitoes but as an ally to the housewife in eliminating insect pests. There is a section devoted to vitamins, with a useful guide to the choice of a balanced diet. In the section on vaccines the visitor learns in a simplified way how Sir Almroth Wright protected modern armies against typhoid. The wonders of the electrocardiograph also are shown.

PARIS

(From Our Regular Correspondent)

Oct. 6, 1945.

New Code of the Medical Profession

Before the war the Medical Professional Organizations (Syndicat des médecins) protected the professional interests and also dealt with matters of discipline and ethics. In 1936, in order to achieve the latter aim, the necessity for creating a special organization, the Order of Physicians, was discussed; war prevented its realization. The Vichy government dissolved the professional associations and created the "Order of Physicians," which dealt with functions pertaining to the profession of doctor. But the order created by Vichy was an autocratic organization, which accepted the German law, excluded Jewish doctors and sent doctors to Germany. It was constantly in conflict with the Academy of Medicine, which courageously defended the independence and the dignity of the French medical corps. Letters which your correspondent addressed to THE JOURNAL reporting this fact did not arrive because of the war.

After the liberation, the Medical Professional Organizations were reestablished by the order of the minister of public health on Dec. 15, 1944. Their activity is restricted to the professional defense of members of the organizations. In agreement with the representatives of the medical profession, the minister of public health promulgated a new code, which appeared on Sept. 28, 1945 in the *Journal officiel*. The Order of Physicians makes membership compulsory for all doctors practicing in France and in Algeria. Membership in the order entitles the physician to practice anywhere in the national territory. The Order attempts to maintain principles of morality, probity and devotion on the part of the doctor and safeguards the independence of the profession. The basic organization is the district board, which is elected for six years by doctors who must be at least 30 years old. The deliberations of the district board are not public. It does not have to take into account the political or religious opinions or attitude of the members of the Order. The regional board consists of eight members delegated by the district boards. The regional board, which alone has a disciplinary power, can inflict the following disciplinary penalties: warning, rebuke, temporary or permanent prohibition of the power of exercising medical functions in establishments of the state and of townships, temporary interdiction (up to three years) of practicing and, finally, removal of a doctor's name from the list of the Order. The doctor appearing before the board can obtain assistance either of a fellow doctor or of a barrister. After three years, expelled doctors may be reinstated in their profession.

The national board of the Order, composed of twenty-four members, is elected by the district boards for a period of six

years; to those members is added one member of the Academy of Medicine. The national board of the Order is the most important counselor of the minister of public health. It directs the work of the district boards. Its disciplinary section hears the appeals against the decisions of regional boards. A final appeal must be made to the "Conseil d'état," the highest court in the land. The Order is authorized to promote mutual help and retirement benefit organizations for the members. Similar Orders have been created for the professions of surgeon, dentist and midwife.

Hookworm Therapy of Polycythemia Vera

In a clinical lecture at the Saint Antoine Hospital, Brumpt described 8 cases of polycythemia vera treated with provoked ancylostomiasis, which was employed for the first time by Duvoir and Brumpt in 1939. The patient is infected through the skin with 400 to 700 larvae, according to his weight and the degree of polyglobulia. This infection causes gastric pains and transient diarrhea, which can be treated with opium. *These painful discomforts are largely compensated for by the favorable results of the treatment.* By the end of the first month the erythrocyte count has been progressively lower, reaches 4,000,000 at the end of the third month and has become normal at about the end of the sixth month. The number of leukocytes reaches a maximum of 40,000 to 60,000 the third month and then diminishes. The eosinophils comprise 75 per cent in the third month, 20 per cent in the sixth and 15 per cent after one year. A clinical amelioration becomes apparent: *somnolence, headache, vertigo disappear, the blood pressure is lowered, albuminuria disappears and the urea in the blood becomes almost normal.* This amelioration persists for months and years. Ancylostomotherapy is an ambulatory method, which does not in the least interrupt the patient's occupation. The action of *Ancylostoma* is protracted. It can, if necessary, be interrupted by administration of anthelmintics. Ancylostomotherapy is indicated in all the stages of polycythemia vera and perhaps even in certain cases of secondary polycythemia. Brumpt recommends especially this method in cases of hypertension, cardiac and renal disease and the treatment of aged patients when phenylhydrazine therapy is contraindicated; it can be associated with other treatments. Artificial ancylostomiasis is contraindicated in splenic tuberculosis with polycythemia. The author concludes that the temperature of France is not favorable to the propagation of *Ancylostoma*. On the other hand, *Ancylostoma* does not multiply in the infected patient. Notwithstanding, the treatment is not to be employed with miners, men working in a huge tunnel or patients who are likely to leave France for tropical countries.

Professor Fleming in Paris

At the invitation of the minister of public health, F. Billoux, Professor Fleming paid a visit to the Paris medical institutions. On the 4th of September he was received by the Académie de médecine in a formal meeting. G. Brouardel, president of the academy, H. Vincent and Léon Binet gave addresses. Professor Fleming replied by indicating two significant elements in his career as a scientist. First of all was chance, but, as Pasteur said, "chance favors intelligences that are ready." Secondly he emphasized that, in his opinion, the method of scientific research must be that of an isolated scientist who is able to follow the lead of an observation up to discovery. Then comes the team of scientists, without which his discovery could not have been realized and penicillin, as we use it today, developed.

Professor Fleming also visited the Pasteur Institute and the center for the production of penicillin in Paris, created on the initiative of the minister of public health and the army

medical corps. He was received by General de Gaulle, chief of the provisional government, and was awarded the gold medal of the medical service and nominated Commander of the Order of Public Health.

BELGIUM

(From a Special Correspondent)

Oct. 20, 1945.

Medical Days in Brussels

In order to revive the traditional institution of the Medical Days of Brussels, which were interrupted by the war, and to prove that Belgian hospitality remains unchanged, the organizers of this meeting took the initiative of calling together a veritable medical congress. The program included a surgical morning clinic at the University Hospital and in other surgical institutions. In the afternoon there were four important conferences.

Professor E. Renaux, who directed the Belgian transfusion service during the war period demonstrated the advantages and disadvantages of blood, plasma and serum transfusions.

Professor R. Danis, with the aid of films made for the English audience, gave his conference in English on axial pressure and bone growth.

Professor André Simonart of the faculty of Louvain, recently returned from Buchenwald, described the treatment of the repatriated who suffered from malnutrition, illustrating his lecture with a film on the results of vitamin therapy.

Dr. Gustave Coryn, president of the Belgian Society of Surgery, presented results of his experience in the treatment of pulmonary abscess.

International Committee on Military Medicine

The international Committee on Military Medicine and Pharmacology met for the first time since the war in a special session in Brussels on January 29 and 30. In view of the circumstances the number of nations represented was small and comprised only the delegates from the United States, France, Great Britain, Switzerland and Belgium.

The presidency, previously held by General Reynolds, at present in Chicago, was transferred to Col. Robert B. Hill, who was informed to this effect by a telegraphic message.

It was decided to continue the publication of the *Bulletin International des Services de Santé des Armées* with the cooperation of the national correspondents of the International Office of Military Medicine and to resume all the activities of this office.

The next congress is to be held at Bern; the date will be fixed later by the Swiss government.

The committee has further decided to cooperate with the interallied surgical conference planned and organized in Paris by the administration of the health service of the French war ministry.

Marriages

PETER W. CHERNENKOFF, Bend, Ore., to Lieut. Ruby A. Brenden in St. Valery, France, June 27.

DOUGLAS JENNINGS JR., Bennettsville, S. C., to Miss Elizabeth Ilderton in Charleston, October 6.

IRVIN HILARY GRIFFIN, Moundville, Ala., to Miss Mabry Griner of Tuscaloosa, September 18.

JOHN MARTIN IRVIN, Milwaukee, to Miss Virginia Van de Sand of Fulton, Ill., September 15.

FRANK L. PLACHTE, Los Angeles, to Miss Saralce Bender of Eureka, S. D., September 7.

NORMAN WILLIAM FRINK to Miss Kathryn Analdine Lee, both of Detroit, September 9.

ROY F. GARRISON to Miss Barbara Ummel, both of Kansas City, Mo., September 3.

Deaths

Peter Bassoe ☉ Chicago, a leader in neurology and psychiatry, died at the Presbyterian Hospital, November 5, of coronary thrombosis, aged 71.

Dr. Bassoe was born in Drammen, Norway, May 18, 1874. He graduated at the Real-gymnasium, Oslo Kathedralskole, in 1892, coming to the United States the following year. In 1897 he graduated at the College of Physicians and Surgeons, School of Medicine of the University of Illinois, serving his internship at the Cook County Hospital. He had been assistant physician and pathologist at the Mount Pleasant (Iowa) State Hospital from 1898 to 1900 and assistant physician at the Worcester (Mass.) State Hospital, 1901-1902. He had served as professor of neurology at Rush Medical College from 1924 to 1941, having been a member of the faculty in various capacities since 1905. He was professor of neurology at Illinois from 1941 until his death.

Dr. Bassoe had been a member of numerous societies devoted to his specialty, including the American Neurological Association, Chicago Neurological Society, Chicago Pathological Society and the Institute of Medicine of Chicago, all of which he had served as president, the Association for Research in Nervous and Mental Disease and the Central Neuropsychiatric Association. He held honorary membership in the Medical Society of Norway, Medical Society of Sweden and the Minnesota Neurological Society. He was a member of the consulting staff of the St. Francis Hospital in Evanston and the Grant Hospital, a member of the board of directors of the Norwegian American Hospital and of the staff of the Swedish Covenant Hospital. He had been a member of the Presbyterian Hospital staff for a number of years, serving as chairman of the department of neurology there since 1942. Dr. Bassoe was chairman of the Section on Nervous and Mental Diseases of the American Medical Association from 1921 to 1922 and had been a member of specialty groups concerned with psychiatry development, including the Illinois Psychiatric Research Council, an early state committee to aid in the development and care of the mentally diseased, as well as of a special group created to study sex degeneracy. He had been contract surgeon of the neuropsychiatric board and member of the medical advisory board during World War I. His extensive writings included service as editor of the "Year Book in Nervous and Mental Diseases."

Clay Alder, Chicago; University of Illinois College of Medicine, Chicago, 1915; on the staff of the Augustana Hospital; died August 13, aged 58, of chronic myocarditis, decompensation and arteriosclerosis.

Marvin Eldon Arrington, Vaiden, Miss.: Tulane University of Louisiana School of Medicine, New Orleans, 1931; member of the American Medical Association; since July 1, 1933 part time health officer of Carroll County; died in the Greenwood-Leflore Hospital, Greenwood, August 8, aged 38, of injuries received in an automobile accident.

Isidor Phineas Behrman, Brooklyn; University and Bellevue Hospital Medical College, New York, 1905; member of the American Medical Association; on the staff of the Israel-Zion Hospital; died in the Park East Hospital August 4, aged 62, of carcinoma.

Benjamin Hoyt Belcher ☉ Yonkers, N. Y.; University and Bellevue Hospital Medical College, New York, 1904; director of the venereal disease clinic of the city department of health; on the staff of St. Joseph's Hospital, Yonkers General Hospital, Yonkers Professional Hospital and St. John's Riverside Hospital, where he died July 31, aged 66, of cardiac failure following perforated duodenal ulcer.

James Clark Berry, Shadyside, Ohio; Starling Medical College, Columbus, 1901; died July 30, aged 73, of coronary thrombosis.

James M. Brady ☉ St. Louis; St. Louis College of Physicians and Surgeons, 1898; associate professor of pediatrics emeritus at the St. Louis University School of Medicine; specialist certified by the American Board of Pediatrics, Inc.; member of the American Academy of Pediatrics; fellow of the American College of Physicians; served on the staff of the DePaul Hospital; died September 6, aged 68, of chronic myocarditis.

Prentiss Agnew Brown ☉ New Kensington, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1896; member of the Radiological Society of North America, Inc.; one of the founders of the Citizens General Hospital and a director of the Logan National Bank and Trust Company; died July 19, aged 70.

William Culp Brown, Oak Park, Ill.; National Medical University, Chicago, 1895; also a dentist; died in the West Suburban Hospital August 1, aged 79, of chronic interstitial nephritis and chronic myocardial degeneration.

William Simon Brown ☉ Elgin, Ill.; College of Physicians and Surgeons of Chicago, 1894; served in the medical corps of the U. S. Army during World War I; on the staff of the American Hospital, Chicago, St. Joseph Hospital and for many years chief of staff of the Sherman Hospital, where he died August 17, aged 77, of coronary thrombosis.

Joseph V. Capel, Harrisburg, Ill.; University of Louisville Medical Department, 1893; St. Louis College of Physicians and Surgeons, 1894; member of the American Medical Association; president of the Harrisburg National Bank; died August 7, aged 78, of cerebral hemorrhage.

Chester Harlan Clark, Wells, Nev.; University of Missouri School of Medicine, Columbia, 1904; on the courtesy staff of Elko (Nev.) General Hospital, where he died July 23, aged 69, of coronary occlusion.

Henry Leo Crahan, Rutland, Vt.; University of Vermont College of Medicine, Burlington, 1903; member of the American Medical Association; served overseas as a captain in the medical corps of the U. S. Army during World War I; died in the Veterans Administration Facility, White River Junction, July 28, aged 66.

Fay E. Cramer, Hawthorne, Calif.; Creighton University School of Medicine, Omaha, 1924; served overseas during World War I; died August 6, aged 48, of cardiac thrombosis.

Alice Lavinia Kimball Darmond, Methuen, Mass. (licensed in Massachusetts in 1900 and New York in 1907); died June 24, aged 69, of carcinoma of the breast.

Cline Fleming Davidson ☉ Seattle; Johns Hopkins University School of Medicine, Baltimore, 1907; served during World War I; for many years endocrinologist at the Children's Orthopedic Hospital; on the staffs of the Swedish and Doctors hospitals; died July 21, aged 65, of coronary occlusion and Parkinson's disease.

Joseph Anthony Di Leo, Long Island City, N. Y.; Loyola University School of Medicine, Chicago, 1931; member of the American Medical Association; assistant attending surgeon at St. John's Hospital, where he died August 9, aged 39, of hypertensive heart disease.

William McGaughey Dollerhide, Oak Grove, La.; Kentucky University Medical Department, Louisville, 1904; died July 12, aged 68, of carcinoma of the liver.

William H. Enos, Alton, Ill.; Pulte Medical College, Homeopathic, Cincinnati, 1880; died in St. Joseph's Hospital July 27, aged 90, of hypostatic pneumonia.

Valentine Benjamin Fischer, Boulder, Colo.; University of Colorado School of Medicine, Denver, 1909; served as regent at the University of Colorado from 1934 to 1940; member of the American Academy of Ophthalmology and Otolaryngology; served as a medical examiner on the county draft board during World War I; died in Estes Park August 3, aged 59, of coronary thrombosis.

Andrew Barron Fitzgerald, North Creek, N. Y.; University of Vermont College of Medicine, Burlington, 1912; died July 31, aged 58, of generalized arteriosclerosis.

William E. Gibson, Issaquah, Wash.; College of Physicians and Surgeons, Keokuk, Iowa, 1888; formerly mayor, member of the town council and state legislature; died June 28, aged 85, of senility.

John Gilbert, York, Pa.; Jefferson Medical College of Philadelphia, 1895; member of the American Medical Association; formerly school physician; died July 30, aged 77, of cerebral hemorrhage.

Abraham L. Greenberg ☉ Brooklyn; Fordham University School of Medicine, New York, 1919; specialist certified by the American Board of Urology, Inc.; member of the American Urological Association; fellow of the American College of Surgeons; on the staffs of the Beth-El and Brooklyn Jewish hospitals; died at Stamford, N. Y., July 15, aged 50, of coronary thrombosis.

Merton Lyman Griswold, Uxbridge, Mass.; University of Vermont College of Medicine, Burlington, 1896; member of the American Medical Association; died June 10, aged 77, of cerebral hemorrhage.

Russell LeRoy Guffey, San Francisco; Ohio State University College of Medicine, Columbus, 1920; died July 22, aged 52, of pneumonitis, asthma and acute dilatation of the heart.

Posey Dow Gum, West Plains, Mo.; Louisville (Ky.) Medical College, 1894; member of the American Medical Association; past president and secretary of the Howell-Oregon-Texas Counties Medical Society; on the staff of the Christa Hogan Hospital; president of the chamber of commerce; died in Kansas City July 10, aged 72, of hypostatic pneumonia.

Frederick Charles Harris, Cando, N. D.; Trinity Medical College, Toronto, Ont., Canada, 1895; formerly coroner and president of the board of health of Towner County; once a director of the North Dakota State Tuberculosis Sanatorium, San Haven; died September 15, aged 74, of coronary thrombosis.

George Tracy Haverfield, Uhrichsville, Ohio; Starling Medical College, Columbus, 1907; died in the Twin City Hospital, Dennison, July 26, aged 63, of cerebral hemorrhage.

James Decator Henderson, Boyds Creek, Tenn.; Tennessee Medical College, Knoxville, 1891; Miami Medical College, Cincinnati, 1896; member of the American Medical Association and the Ohio State Medical Association; served in the medical corps of the U. S. Army during World War I; died in the Veterans Administration Facility, Mountain Home, July 8, aged 79, of disease of the central nervous system.

William Hindle @ Providence, R. I.; Harvard Medical School, Boston, 1903; member of the New England Pediatric Society; superintendent of the Charles V. Chapin Hospital, where he died July 26, aged 69, following an operation for thrombophlebitis of the popliteal vein.

Francis Roderick Holbrook @ Des Moines; University of Pennsylvania Department of Medicine, Philadelphia, 1904; president of the Polk County Medical Society in 1931; served in the medical corps of the U. S. Army during World War I; medical director of the Solar Aircraft Company; on the staffs of the Iowa Methodist Hospital and the Mercy Hospital, where he died July 25, aged 64, of multiple myeloma.

Gerry Rounds Holden @ Jacksonville, Fla.; Johns Hopkins University School of Medicine, Baltimore, 1901; served as president of the Florida Medical Association; member and past president of the Southeastern Surgical Congress; member of the Southern Surgical Association and the South Atlantic Association of Obstetricians and Gynecologists; fellow of the American College of Surgeons; consulting gynecologist, Flagler Hospital, St. Augustine, and St. Luke's and Duval County hospitals; died July 21, aged 70.

Thomas Milton Holmes @ Delmar, N. Y.; Albany Medical College, 1909; served as a member of the medical board of the State Employees Retirement System; received the Purple Heart for service during World War I; died July 15, aged 63.

Charles John Hufnagel @ Richmond, Ind.; University of Louisville Medical Department, 1914; president of the Wayne-Union Counties Medical Society; served two years in France during World War I; surgeon on the staff of the Reid Memorial Hospital; died in Chicago July 22, aged 55, of coronary occlusion.

Thomas Lee Hutton @ Hartsburg, Ill.; Barnes Medical College, St. Louis, 1908; died in the Deaconess Hospital, Lincoln, July 20, aged 66, of heart disease.

James Marcus Jackson New Salem, Pa.; Harvard Medical School, Boston, 1900; Western Pennsylvania Medical College, Pittsburgh, 1902; member of the American Medical Association; died July 4, aged 68.

Edwin Brown Jenks @ Diamond Point, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1901; died July 17, aged 68, of coronary thrombosis.

Roland Joseph Joyce Nashua, N. H.; Tufts College Medical School, Boston, 1920; member of the American Medical Association; served as president of the Hillsborough County Medical Society; on the staffs of St. Joseph's and Memorial hospitals; died in the Phillips House, Boston, July 8, aged 49, of malignant tumor of the brain.

John W. Kramps, Chicago; Rush Medical College, Chicago, 1898; on the staffs of the Alexian Brothers' Hospital, St. Anne's Hospital and St. Elizabeth Hospital, where he died August 16, aged 77, of arthritis and heart disease.

Samuel Leventhal @ Brooklyn; Long Island College Hospital, Brooklyn, 1923; associate physician at the Bushwick and Lutheran hospitals; died July 11, aged 48, of carcinoma of the lung.

Edwin G. Low, Bangor, Mich.; Chicago Homeopathic Medical College, 1898; member of the American Medical Association; on the staff of the Borgess Hospital in Kalamazoo; died July 12, aged 84, of carcinoma of the large intestine.

Charles McDowell, Brooklyn; New York Homeopathic Medical College, 1878; member of the board of trustees and emeritus professor of physiology and public health at his alma mater, now known as the New York Medical College, Flower and Fifth Avenue Hospitals; died in St. John's Hospital August 31, aged 87, of toxemia following a fractured hip incurred in a fall.

John Henry Molinelli @ West Pittston, Pa.; Regia Università di Torino Facoltà di Medicina e Chirurgia, Turin, Italy, 1900; vice president and director of the Liberty National Bank in Pittston; on the staff of the Pittston (Pa.) Hospital, where he died July 21, aged 71, of cardiorenal disease.

Abraham Lear Morris, Chicago; Bennett Medical College, Chicago, 1912; member of the American Medical Association; died in the Woodlawn Hospital July 27, aged 62, of cerebral hemorrhage.

Millard Tarsten Nelsen @ Tacoma, Wash.; Washington University School of Medicine, St. Louis, 1921; member of the Pacific Coast Surgical Association and the North Pacific Surgical Association; fellow of the American College of Surgeons; member of the surgical staff, Tacoma General and St. Joseph's hospitals; attending surgeon, Pierce County Hospital; consulting surgeon, Veterans Administration Hospital, American Lake; died July 2, aged 47.

Harry Ostrer, Boston; Middlesex College of Medicine and Surgery, Cambridge, 1923; died July 16, aged 52, of cerebral thrombosis.

William Anneslay Patterson, Gansevoort, N. Y.; University of the City of New York Medical Department, New York, 1887; died July 25, aged 83, of fractured hip due to a fall, arteriosclerosis and pernicious anemia.

Maurice Mesha Perlson, Milwaukee; Marquette University School of Medicine, Milwaukee, 1927; served as school physician; formerly on the staff of the Mount Sinai Hospital; died July 25, aged 43, of coronary thrombosis.

John William Primrose, Clarksdale, Miss.; Memphis (Tenn.) Hospital Medical College, 1902; member of the American Medical Association; on the staff of the Clarksdale Hospital, where he died July 16, aged 65, of mitral regurgitation.

Thomas Ennis Pugh, Kansas City, Kan.; Atlanta Medical College, 1914; member of the American Medical Association and the Medical Association of Georgia; served with the British government during World War I; formerly on the staffs of various Veterans Administration facilities; died in the University of Kansas Hospitals July 18, aged 51, of tuberculosis.

Rezin J. Pumphrey, Lake Worth, Fla.; Cincinnati College of Medicine and Surgery, 1885; fellow of the American College of Surgeons; formerly on the staff of the City Hospital in Massillon, Ohio; died in West Palm Beach July 20, aged 83, of nephrosclerosis and arteriosclerotic heart disease.

Hauphrey Helm Sherwood @ Kirkland, Wash.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; died in Seattle July 2, aged 73, of coronary disease.

Joseph Arthur Smith, Athol, Mass.; Boston University School of Medicine, 1898; for many years school physician; served for several terms on the school board; a member of the draft board during World War I; died July 17, aged 70.

John Stile, Alturas, Calif.; Cooper Medical College, San Francisco, 1900; served as health officer of Modoc County; died in the Woodland Clinic Hospital, Woodland, July 13, aged 69.

William Sylvester Streker @ Providence, R. I.; Jefferson Medical College of Philadelphia, 1908; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; on the staff of St. Joseph's Hospital; died in Barnstable July 8, aged 59, of coronary thrombosis.

Robert John Styers, Amelia C. H., Va.; University College of Medicine, Richmond, 1911; member of the American Medical Association; served overseas during World War I; died in the Stuart Circle Hospital, Richmond, July 24, aged 59.

Wallace Henry Tarbell @ Contoocook, N. H.; University of Vermont College of Medicine, Burlington, 1902; served as health officer and member of the school board; on the staffs of the Margaret Pillsbury General and New Hampshire Memorial hospitals in Concord; died July 20, aged 73, of coronary thrombosis.

Adrian Langley Zemmer, Port Huron, Mich.; Wayne University College of Medicine, Detroit, 1934; member of the American Medical Association; accidentally drowned July 8, aged 40.

Correspondence

THE INCIDENCE OF DIABETES

To the Editor:—The article by Spellberg and Leff on the incidence of diabetes and glycosuria in inductees (*THE JOURNAL*, September 22, p. 246) will be welcomed by every one interested in the incidence of the disease. Such surveys should be carried out still more extensively.

May I comment on the reference of the authors to my Arizona experience? Having noted that in 1937 the diabetic mortality in New York was 42 and in Rhode Island 36.9 but in Arizona only 10 per hundred thousand, with the cooperation of the doctors in Arizona a study was made of the morbidity of diabetes in that state. Whereas mortality records showed great differences between Rhode Island and Arizona, when we made a survey of the state it was found that the morbidity was approximately the same in the two states (see Joslin, E. P.: *The Universality of Diabetes*, *THE JOURNAL*, Dec. 14, 1940, p. 2033).

Some of the findings were as follows: 1. Whereas Jews made up 0.5 per cent of the inhabitants of Arizona, they comprised 2 per cent of the total with diabetes (755). 2. Deaths of Indians from diabetes averaged 2 per year for the six years 1934 to 1939, but in the survey 73 Indians with diabetes were discovered or approximately the same percentage of all the diabetic as of Indians in the whole population. 3. In the prison and in the mental hospital in Arizona more diabetic inmates were found proportionately than in similar institutions in the East and more than would be expected by the National Health Survey. 4. Diabetes was acknowledged by 1 in 42 doctors of 334 reporting in Arizona and by 1 in 36 of 393 reporting in Rhode Island. 5. In the state as a whole there were 755 diabetic patients reported by the 290 doctors, who stated that they had or had not diabetic patients in their care, or 2.8 per doctor.

Diabetes is universal. The incidence is highest where (1) the average age is oldest, (2) women predominate, (3) obesity is most frequent, (4) the proportion of Jews is greatest, (5) medical supervision is closest and (6) deaths are most accurately reported.

ELLIOTT P. JOSLIN, M.D., Boston.

SULFATHIAZOLE IN PLASTIC VEHICLE

To the Editor:—A review of the article by Draeger and Pijoan on Treatment of Impetigo Contagiosa with Sulfathiazole in an Alcoholic Plastic Vehicle (*THE JOURNAL*, August 11, p. 1096) fails to reveal any mention of a control series of treatment with the vehicle minus the sulfathiazole. This a serious defect. Clinicians have recognized for decades the feasibility of successful treatment of impetigo contagiosa by occlusive dressings alone. It is important to have the authors indicate in a supplementary report the results in impetigo contagiosa of application of their alcoholic plastic vehicle without sulfathiazole.

On the basis of insufficient clinical study, liquid provi-nol acetate dressing inhibits growth of pus forming bacteria on the skin surface and in superficial injuries. Application of 55 per cent ethyl alcohol is also known to be a deterrent to bacterial growth. Its equivalent was the major volume of the alcoholic plastic vehicle of Draeger and Pijoan.

HERMAN GOODMAN, M.D., New York.

[On receiving a copy of Dr. Goodman's communication, Captain Draeger replied:]

To the Editor:—The emphasis which Lieutenant Pijoan and I intended to place in our paper was on the vehicle and its convenience, not on the incorporated sulfathiazole. Sulfadiazine in dimethoxy cellulose was used without alcohol in an aqueous medium for the treatment of impetigo (*Southwest. Med.* 27:118

[May] 1943) and in the treatment of burns and other infections (*Bull. Johns Hopkins Hosp.* 69:217 [Aug.] 1941; 71:304 [Nov.] 1942). In these reports the dimethoxy cellulose was dissolved in water and not in alcohol. The introduction of alcohol was not for its therapeutic action but rather to increase the drying rate, a practical point in convenience. However, dimethoxy cellulose apparently did limit the spread of the infection. In this light the conclusion which we expressed may be considered as not well worded.

R. H. DRAEGER, CAPTAIN (MC), U. S. Navy.

DOCTORS' MARK

To the Editor:—The subject discussed by Dr. Ronchese in his article "Personal Identification" in the July 28 issue of *THE JOURNAL* is very interesting, and the article itself is excellent. However, in his discussion of the signs, or stigmas, of the various trades and professions I found no reference to the one that often identifies the physician. This consists of an obvious bony swelling over the dorsal surface of the middle phalanx of the middle finger of the left hand, the result of repeated percussion during examinations of patients' hearts and lungs.

FRANK COLE, M.D., Duluth, Minn.

Director, Department of Anesthesiology, St. Mary's Hospital.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in *THE JOURNAL*, Nov. 10, page 766.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Mar. 19-21. Sec. Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

CONNECTICUT: * Endorsement. Hartford, Nov. 27. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven.

DELAWARE: Examination. Dover, Dec. 12. Endorsement. Dover, Dec. 19. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

FLORIDA: * Jacksonville, Nov. 26-27. Sec., Dr. Harold D. VanSchaick, 2736 S. W. Seventh Ave., Miami 36.

IDAHO: Boise, Jan. 15. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

KANSAS: Topeka, Dec. 6. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

KENTUCKY: Louisville, March 25-27. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

MARYLAND: Medical. Baltimore, Dec. 11-15. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore. Homeopathic. Baltimore, Dec. 11-12. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, Nov. 20-23. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston.

NORTH DAKOTA: Grand Forks, Jan. 1. Sec., Dr. G. M. Williamson, 41 1/2 S. Third St., Grand Forks.

OKLAHOMA: * Oklahoma City, March 23. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: * Jan. 23-26. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Harrisburg, January. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

SOUTH DAKOTA: * Pierre, Jan. 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

VERMONT: Burlington, March or April 1946. Sec., Dr. F. J. Lawless, Richmond.

WISCONSIN: * Madison, Jan. 8-10. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

* Basic Science Certificate required.

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SOUTH DAKOTA: December. Sec., Dr. J. D. Alway, Aberdeen.

WISCONSIN: Milwaukee, Dec. 1. Sec., Prof. Robert N. Bauer, 152 W. Wisconsin Ave., Milwaukee.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

30:109-214 (Aug.) 1945

- Alteration in PR Interval Associated with Change in Posture. G. W. Manning and C. B. Stewart.—p. 109.
- Congenital Heart Disease: Case Reports on 3 Members of Family. I. Stein and D. J. Barber.—p. 118.
- Strain of Pectoralis Minor Muscle, Important Cause of Precordial Pain in Soldiers. M. Mendlowitz.—p. 123.
- Oral Single-Dose Digitalization with Digitalis Leaf and Digitaline "Nativelle." L. N. Katz and W. Wise.—p. 125.
- Cardiac Aneurysm with Rupture. R. L. Fisher.—p. 133.
- Electrocardiogram in Hypertension; I. Its Description. E. Evans, Marion Mathews and P. D. White.—p. 140.
- Id.: II. Effect of Radical Lumbodorsal Sympathectomy (Preliminary Report). P. D. White, R. H. Smithwick, Marion W. Mathews and E. Evans.—p. 165.
- Id.: III. Electrocardiograms of Hypertensive Patients Followed for a Long Time Without Splenic Resection in Comparison with Those in Patients Who Had Had Splenic Resection. E. Joaquin Canabal, H. F. Warneford-Thomson and P. D. White.—p. 189.
- *Clinical Observations with Cerberin. G. Bond, H. Baum and G. Dimond.—p. 194.

Clinical Observations with Cerberin.—Bond and his associates felt that the effect of cerberin, an extract from the kernel of *Cerbera odollam*, a tree native of India and the Dutch East Indies, could best be demonstrated in patients with auricular fibrillation. They selected patients who had not received previous digitalis medication. On admission each patient was given complete rest in bed, with sedation if necessary, for eighteen to twenty-four hours, and in 2 cases as much as ten days' rest in bed was maintained before medication was begun. This was done to discount the effect of rest on the fibrillation before the drug was given. In the first 10 cases cerberin was given intravenously, while in the last 5 an oral preparation was used. Fourteen of the 15 patients treated with the drug had auricular fibrillation and 1 was in congestive failure with a regular rhythm. Auricular fibrillation was controlled satisfactorily with the intravenous or oral use of cerberin. Its effect is much more rapid than that of digitalis and more transitory after the drug is discontinued. No untoward effects were noted when therapeutic doses were used.

American Journal of Clinical Pathology, Baltimore

15:263-304 (July) 1945

- Spinal Fluid Protein and Colloidal Mastie Tests. L. E. A. Feinel.—p. 263.
- Plasma Vitamin A Level in Renal Diseases. H. Poppel, E. Steigmann and Hattie A. Dymiewicz.—p. 272.
- Production of Rh Antiserum in Guinea Pigs Through Inoculation with Human Red Blood Cells. Bettina B. Carter.—p. 278.
- Observations on Sensitization to Rh Factor by Blood Transfusion. L. J. Unger and A. S. Wiener.—p. 280.
- Pathology of Anuria in Rh Negative Patient. V. J. Dardinski.—p. 286.
- *Food Poisoning: Importance of Method of Presentation of Medicolegal Evidence. H. A. Heise.—p. 289.
- Determination of "Sulfate Index" as Measure of Degree of Exposure to Benzene Vapor. W. S. Hoffman and Bess Osgood.—p. 293.
- Association of Aorta with Congenital Bicuspid Aortic Valve and Dissecting Aneurysm of Arch of Aorta. R. B. Lewis.—p. 297.

Food Poisoning.—Heise describes a case of food poisoning involving legal action against a food distributing company. The offending food was a salad containing canned sea foods, macaroni, mayonnaise and celery. A medical witness for the complainant contended that the sea food was the most likely source of contamination and that this contamination occurred before

the cans were opened. In presenting medical testimony for the defense, a salad was prepared according to the method used in making the original salad, and this salad was then tested for bacterial contamination. The experiment indicated that the celery and the mayonnaise were possible sources of contamination. The actual cultures of the ingredients of the salad, as well as cultures of the salad itself made at various times, failed to impress a jury and the canning company was adjudged guilty. However, a supreme court which reviewed the evidence including photographs of the cultures reversed the decision and dismissed the case.

American Journal of Medical Sciences, Philadelphia

210:141-280 (Aug.) 1945

- Comparison of Behavior of Microcrystalline Sulfadiazine with That of Ordinary Sulfadiazine in Man. J. G. Reinhold, F. J. Phillips and H. F. Flippin, with technical assistance of Lillian Pollack.—p. 141.
- Penicillin—Its Present Status in Treatment of Infections. C. S. Keeler.—p. 147.
- Study of Types of Hypersensitivity Induced by Penicillin. A. Rostenberg Jr. and H. Welch.—p. 158.
- Effect of Sodium Salicylate on Sedimentation Rate of Erythrocytes in Vitro. F. Homburger.—p. 168.
- Erythrocyte Sedimentation Rate in Rheumatic Fever: Its Significance in Adolescent and Overweight Children. T. N. Harris.—p. 173.
- Experiments on Components A and B (Quick) of Prothrombin. W. J. Ornel and C. R. Lam.—p. 181.
- Hemolytic Transfusion Reactions Due to Rh Factor: Report of 2 Cases. A. W. Frisch.—p. 184.
- Acceptability and Effectiveness of Condom as Contraceptive Method. C. Tietze and J. B. Hagaman.—p. 189.
- Magnesium Partition in Hypothyroidism, with Special Reference to Effect of Thiamine. G. W. Bissell.—p. 195.
- Vitamin Levels in Spruce. D. Cayer, J. M. Rubin and W. A. Peltzweig.—p. 200.
- *Early Filariasis (Baneroffi) in American Soldiers. I. G. Hodge, E. Denhoff and J. B. Vander Veer.—p. 207.
- *Tularemia Pneumonia: Review of American Literature and Report of 15 Additional Cases. B. M. Stuart and R. L. Pullen.—p. 223.
- Osteomyelitis Caused by *Granuloma Inguinale*: Report of Case with Cultivation of Donovan Body in Yolk Sack of Developing Chick Embryo. W. H. Sheldon, B. R. Thebaut, A. Heyman and Margaret J. Wall.—p. 237.
- Hemochromatosis Associated with Primary Adenocarcinoma of Liver: Case Illustrating Diagnostic Features. J. A. Oshlag and R. E. Martin, with Pathologic Report by C. H. Binford.—p. 245.

Early Filariasis in American Soldiers.—Hodge and his associates present observations on 62 soldiers who were diagnosed as having filariasis. The 62 cases of early filariasis are divided into five groups: Group 1 comprised 47 cases characterized by genital manifestations. The 13 patients of group 2 had superficial lymphangitis of the extremities. Sixteen patients of group 3 had multiple lesions. The patient designated as belonging to group 4 had symptoms suggestive of involvement of the deep lymphatics. The authors placed in group 5 asymptomatic cases with microfilariae in the blood; only 1 of their patients belonged to this group. Laboratory studies were fairly complete on 50 of the 62 clinical cases. These included complete blood counts, frequent differential leukocyte counts, examinations of the blood, aspirated fluids and urine for microfilariae. Histopathologic and bacteriologic studies were performed on several lymph nodes. Examination revealed microfilariae in only 2 of 266 soldiers exposed to filariasis. Eosinophilic infiltration was the most constant finding. The additional findings of fibroblastic proliferation, focal necrosis and hyalinization further suggest that the changes are due to an allergin. The authors believe that the early manifestations are due to an allergin present in or produced by living adult filariae. The clinical diagnosis is not dependent on the finding of adult filariae or microfilariae. Clinical manifestations may be multiple and are subject to recurrences. The prognosis must be guarded, but in the light of the present knowledge it appears to be favorable if reinfection is prevented. Some of the early cases may be carriers, and rigid mosquito control should be carried out until more is known regarding the status of these patients.

Tularemia Pneumonia.—Stuart and Pullen state that of the 268 cases of tularemia pneumonia available for study in the American literature (including 15 cases of their own) a history of contact with animals was available in 115. Only 171 of the 268 patients (63.8 per cent) had ulceroglandular, oculoglandular or glandular types of the disease, whereas 97 cases (36.2 per

cent) had no demonstrable primary lesions or lymphadenopathy and may be classified as the typhoidal type of infection. Symptoms presented by patients with tularemia pneumonia fall into two general groups: In the first group the pneumonia is associated with the ulceroglandular, glandular or oculoglandular types of tularemia infection and may occur from one or two days to many months after the localized infection elsewhere has developed. In the second group, evidence of ulceration and lymphadenopathy is lacking. In these cases of typhoidal or cryptogenetic type of tularemia the infection frequently appears to originate as a primary pneumonia, suggesting that the infection may have entered through the respiratory tract. In this group the onset may be sudden with a chill, fever, dyspnea, cough, pain in the chest and profuse sweating. The cough may or may not be productive. These patients appear extremely ill and are frequently suspected of having typhoid. The physical signs of tularemia pneumonia vary with the type and distribution of the lesions. Both lungs are frequently involved. In general the physical findings are those of an atypical pneumonia. Physical examination of the chest may reveal no abnormal findings even though pleuropulmonary involvement can be demonstrated roentgenographically. Hence, roentgenographic studies of the chest of any patient with tularemia are advisable. Of the 225 patients with tularemia observed at the Charity Hospital of Louisiana at New Orleans, 21 (9.33 per cent) had accompanying tularemia pneumonia. The incidence of tularemia pneumonia is distinctly greater in the typhoidal forms than in the ulceroglandular. Pleuropulmonary involvement developed in only 13 (7.1 per cent) of 181 cases of ulceroglandular tularemia, whereas clinical tularemia pneumonia developed in 8 cases of typhoidal tularemia. Of the 21 patients with tularemia pneumonia, 12 died. Although the incidence of tularemia in Negro patients as compared to white patients is proportional to the total admissions of white and Negro patients at Charity Hospital for the same period of time, it would seem that Negroes are particularly lacking in resistance once they have developed the pulmonary forms of the disease. This is evidenced by the fact that 16 of the 21 patients of tularemia pneumonia were Negroes and that 11 of these 16 patients died. Only 1 white patient died, and this may be attributed in part to an uncontrolled diabetes mellitus. In patients who recovered, the average duration of the pneumonia was thirty days.

American J. Obstetrics and Gynecology, St. Louis

50:119-234 (Aug.) 1945 Partial Index

- Further Experiences in Use of Transplanted Abdominal Fascia in Relief of Stress Incontinence. W. E. Studdiford—p. 119
Treatment of Hypo-Ovarism by Sequential and Cyclic Administration of Equine and Chorionic Gonadotropins—So Called One Two Cyclic Gonadotropic Therapy. Summary of Five Years' Results. E. C. Hamblen and C. D. Davis—p. 137
Effect of Respiratory Stimulants in Newborn Infant. Khr. Ti Lim and I. L. Snyder—p. 146
Therapy in Habitual Abortion. C. H. Ingram Jr.—p. 154
Catharina Gertruda Schraders and Her Diary. Note on History of Obstetrics and Especially on History of Placenta Previa. A. A. Marchetti—p. 160
Pathogenesis of Postabortal Peritonitis. Study of 61 Cases. H. C. Falk and G. Blumek—p. 165
Studies Concerning Morbidity and Mortality Following Hysterectomy. J. H. Phillips—p. 174
Five Years' Experience with Caudal Anesthesia in Private Obstetric Practice. A. Baptist Jr.—p. 180
Quadrupolar Quadruplet Pregnancy. B. P. Watson—p. 184
Perineal Strapping Technique for Extraperitoneal Cesarean Section. G. A. Bourgeois—p. 191
Relationship of Maternal Weight Gain and Weight of Newborn Infant. J. S. Bell and I. I. Kurland—p. 202
Coccyoidal Pelvic Inflammatory Disease. I. W. Page and L. M. Boyer—p. 212
Simple Technique to Test Tubal Patency. A. Decker—p. 227

Hypo-Ovarianism Treated with Gonadotropins.—Hamblen, Davis and their co-workers showed that cyclic administration of equine gonadotropin during the follicular phase of the cycle failed to result in progestational bleeding or in pregnancy in women who bled from interval or estrogenic endometria, in many of whom ovarian sterility constituted a major problem. When a similar group of women was treated with the same equine gonadotropin but, in addition, was given injections of chorionic gonadotropin from the fifteenth through the

twenty-fourth day of their cycles there occurred a substantial number of progestational endometria and a number of pregnancies. This therapeutic schedule was named one-two cyclic gonadotropic therapy. A total of 116 hypo-ovarian patients were treated by the sequential and cyclic administration of equine and chorionic gonadotropins. Only 1 of 7 patients with deficient sexual maturation and nonoccurrence of menarche (hypoestrogenism) yielded a progestational endometrium during therapy. Four of 13 patients with infrequent and/or scanty estrogenic uterine bleeding yielded progestational endometria during therapy. Fifteen of 31 patients with prolonged and/or excessive estrogenic bleeding yielded progestational endometria during therapy. Seven of 14 patients with cyclic estrogenic bleeding and ovarian sterility yielded positive responses, including 4 pregnancies. Nine of 50 patients with cyclic bleeding from immature progestational endometria became pregnant during therapy. The following conclusions are reached: 1. Patients with hypoestrogenism (as illustrated by those with deficient sexual maturation) respond poorly to this system of gonadotropic therapy. 2. Patients with anovulatory ovarian failure without hypoestrogenism (as illustrated by those with diverse types of estrogenic bleeding) respond well to this system of therapy. A total of 44.8 per cent yielded progestational endometria. 3. A small percentage of sterile women, whose bleeding from immature progestational endometria constitutes the only significant finding, become pregnant when treated with one-two cyclic gonadotropic therapy.

American Journal of Ophthalmology, Cincinnati

28:823-942 (Aug.) 1945

- *Isolation and Identification of Causative Agent in Epidemic Keratoconjunctivitis (Superficial Punctate Keratitis) and Herpetic Keratoconjunctivitis. A. L. Maumenee, G. S. Hayes and T. L. Hartman.—p. 823.
Thrombosis of Retinal, Choroidal and Optic Nerve Vessels. Pathologic Study. A. Loewenstein and A. Garrow.—p. 840
Treatment of Non-specific Uveitis with Penicillin. S. R. Irvine, F. Maury, J. Schultz, P. Thygeson and A. Unsworth.—p. 852
Status of Compensation for Ocular Injuries in United States. Some Fundamental Considerations. M. Davidson.—p. 856
Experimental and Clinical Studies on Certain Safety Factors in Closure of Cataract Incisions: Results in 187 Operations. A. C. Hilding.—p. 871.
Surgical Reconstruction of Upper Lid. E. B. Hugg.—p. 886
Orthoptic Lisions and Misconceptions. Louisa Wells.—p. 890.
Heredity as Factor in Squint. Lillian P. Darr.—p. 898

Epidemic and Herpetic Keratoconjunctivitis.—Maumenee and his associates report isolation and identification of two closely related but apparently different viruses obtained from the eyes of 6 patients with the typical clinical picture of epidemic keratoconjunctivitis. Material for mouse brain inoculation was obtained from the patients' eyes by washing the lower conjunctiva with 0.5 cc. of Simms' Z solution, which was collected and placed in sterile ampules. To the washings were added several scrapings from the conjunctiva made with a platinum spatula. The material was inoculated intracerebrally into mice, which were killed with gas as close as possible to the termination of their illness. The brains were removed and ground, and a 10 per cent emulsion was centrifuged. The supernatant fluid was pipetted off and either used immediately or frozen and stored. A portion of this supernatant fluid was cultured for evidence of chance bacterial contamination. Corneal inoculations were made in the rabbit by scarifying the corneal epithelium with a syringe needle and rubbing conjunctival scrapings taken from the patient's eye directly on the cornea. Passage material was obtained from the rabbits' eyes. It was found that herpes simplex virus can cause a keratoconjunctivitis which is clinically almost identical to that caused by the epidemic keratoconjunctivitis virus. In spite of the similarity in the clinical picture and the cross immunologic reactions of the two viruses, they are thought to be separate entities but are probably of the same genus. Intracellular inclusion bodies produced by the epidemic keratoconjunctivitis virus have been demonstrated experimentally for the first time. Methylthionine chloride therapy for herpes and epidemic keratoconjunctivitis appears to be of some value in the early stages of these diseases.

American Journal of Public Health, New York

35:783-890 (Aug.) 1945

- Tuberculosis Mortality in England and Certain Other Countries During the Present War. J. A. Doull.—p. 783.
- Epidemiologic Observations on Use of Glycol Vapors for Air Sterilization. E. Biggs, B. H. Jennings and F. C. W. Olson.—p. 788.
- Does Health Education Prevent Venereal Disease? The Army's Experience with 8,000,000 Men. G. W. Larimore and T. H. Sternberg.—p. 799.
- Ameliosis in Hospital for Insane. W. B. Birnkrant, M. Greenberg and H. Most.—p. 805.
- *Successful Treatment of Experimental Western Equine Encephalomyelitis with Hyperimmune Rabbit Serum. J. Zichis and H. J. Shaugnessy.—p. 815.

Hyperimmune Rabbit Serum in Western Equine Encephalomyelitis.—Fifty-five guinea pigs were treated with specific hyperimmune rabbit serum of 500 to 1,000 units when they became sick following intralingual injection of western equine encephalomyelitis virus. Of this number 67.3 per cent recovered. Of the 41 guinea pigs used as controls, 1 recovered spontaneously and 40 died. Serotherapy was less effective in rhesus monkeys, giving a recovery rate of 45.5 per cent against no recoveries in the control group. These animals were treated with serum at the onset of fever following intracerebral injection of the virus. By this method of injection the virus produces a fulminating type of the disease which is more difficult to treat. A western equine encephalomyelitis antiserum has been prepared by hyperimmunization of rabbits which is effective in treating the experimental disease even after the animals showed evidence of central nervous system involvement. It is believed that the successful treatment of the disease in these experiments can be attributed to the use of adequate quantities of antiserum of high potency administered by a route which made the serum antibodies readily available to the animal.

Annals of Internal Medicine, Lancaster, Pa.

23:135-308 (Aug.) 1945

- *Penicillin in Suppurative Disease of Lungs Due to Streptococcus Hemolyticus. H. J. F. Kullman and J. A. Crellin.—p. 135.
- Upper Respiratory Infections: Résumé of Recent Pertinent Data and Observations of Incidence Aboard a Destroyer. W. H. Harris Jr.—p. 147.
- Functional Consequences of Coronary Occlusion. C. J. Wiggers.—p. 158.
- Lymphocytosis in Cerebrospinal Fluid. L. L. Applebaum, J. Strager and W. Paff.—p. 170.
- Neuroses in Combat Zone. W. J. Bleckwenn.—p. 177.
- *Neuropsychiatric Complications Following Spinal Anesthesia. H. E. Yaskin and B. J. Alpers.—p. 184.
- Atrophic Arthritis Associated with Splenomegaly and Leukopenia. F. N. Hatch.—p. 201.
- Oliguria and Anuria Due to Increased Intrarenal Pressure. J. T. Peters.—p. 221.

Penicillin in Pulmonary Suppuration.—Kullman and Crellin report 2 cases of lung abscess resulting from sulfonamide resistant Streptococcus hemolyticus pneumonia. They were successfully treated by parenteral penicillin therapy. In the first patient, who received a total of 3,020,000 units over a period of twenty-four days, the penicillin was given on the first day by continuous intravenous drip and thereafter in doses of 15,000 units at three hour intervals. The second patient received a total of 1,475,000 units over a period of fourteen days. These cases prove the absorption of penicillin through thin walled cavities when treated over a sufficient period of time. The sputum became negative for hemolytic streptococci in three and two days, respectively. Complete healing, demonstrated by roentgenogram, occurred in twenty-six and thirty-four days, respectively. Four patients with Streptococcus hemolyticus empyema were successfully treated by intrapleural injection of penicillin supported by intravenous and intramuscular use of the drug. Two of these patients were classified as sulfonamide resistant. The other 2 had had insufficient sulfonamide to be classified as such. The latter were moribund. Thoracotomy was obviated in all cases of empyema. No evidence of reinfection or recurrence has occurred in any of these cases. Aspirated pleural fluid remained sterile after twenty-four to thirty-six hours, when the intrapleural treatment was supplemented by intravenous and, later, by intramuscular penicillin. The patient receiving only intrapleural penicillin retained an infected pleural space until the sixth day after treatment was started. Success or failure

may depend on the supplemental parenteral administration of penicillin. Residual fibrosis and subjective slight dyspnea necessitated return to a limited duty status in 1 patient. The 3 other patients returned to a full duty status in 125, 126 and 151 days, respectively.

Complications Following Spinal Anesthesia.—Yaskin and Alpers report 6 instances of neuropsychiatric complications following spinal anesthesia. They also mention a case of metastatic spinal cord neoplasm which was discovered after spinal anesthesia in which the anesthetic agent was for a while suspected as being the cause of the myelitic syndrome. In 4 of the patients the complications occurred immediately following the use of the anesthetic agent. They presented syndromes of serious myelitic or myeloradicular nature. Little or no recovery occurred. Two of the reported cases were in the nature of conversion hysteria "paralysis" of the lower extremities. The conversion mechanism was conditioned by the patient's subjective experience with spinal anesthesia. The case of metastatic spinal cord neoplasm is presented to illustrate the importance of keeping in mind the possibility of preexisting neurologic disease when evaluating the role of spinal anesthesia in the causation of postoperative neurologic sequelae.

Annals of Surgery, Philadelphia

122:129-288 (Aug.) 1945

- *Observations on the Severely Wounded in Forward Field Hospitals, with Special Reference to Wound Shock. J. D. Stewart and F. Warner.—p. 129.
- Evacuation Hospital Experiences with War Wounds and Injuries of Chest: Preliminary Report. P. W. Sanger.—p. 147.
- Early Pulmonary Decortication in Treatment of Posttraumatic Empyema. T. H. Burford, E. F. Parker and P. C. Samson.—p. 163.
- Traumatic Right Diaphragmatic Hernia: Case with Delayed Herniation of Liver and Gallbladder. C. H. Keene and B. Copleman.—p. 191.
- Value of Antitoxin in Prevention and Treatment of Malignant Edema and Gas Gangrene: Review of Observations. I. C. Hall.—p. 197.
- Immediate and Late Treatment of Arteriovenous Fistula. E. Holman.—p. 210.
- Arterial Injuries in Theater of Operations. J. A. Kirtley Jr.—p. 223.
- Chronic Hypertrophic Antrum Gastritis. J. Arendt.—p. 235.
- Experiences with Miller-Abbott Tube: Statistical Study of 1,000 Cases. B. C. Smith.—p. 253.
- Surgical Significance of Anomalous Cholecystohepatic Duct: Case Report. H. Neuhoef and S. Bloomfield.—p. 260.
- Complications of Intravenous Therapy. L. M. Tocantins and J. F. O'Neill.—p. 266.
- Coma During and Following Spinal Anesthesia. S. Belinkoff.—p. 278.

Wound Shock.—Stewart and Warner made clinical studies on 114 severely wounded soldiers admitted as nontransportable to forward field hospital units. These soldiers comprised a selected group in urgent need of resuscitation and surgical treatment. The variability in the clinical picture of wound shock gave the impression that the usual concepts in the definition of traumatic shock are too rigid. The mental and emotional state of the patient, pain, blood pressure, pulse rate, sweating, nausea and vomiting, extent of filling of peripheral veins, skin temperature and plasma volume all were elements subject to considerable variation. Reduction in plasma volume was the rule before replacement therapy. The volume of the whole blood was proportionately more depleted than that of the plasma. Initial deficits of hemoglobin are relatively greater than deficits of plasma protein and are less easily corrected. The validity of this observation is somewhat depreciated by the uncertain effects of plasma infusion and blood transfusions. With respect to administration of plasma and whole blood, it was repeatedly noted that quantitative changes do not result from such therapy. Depleted storehouses for plasma protein and hemoglobin have a high priority during restorative therapy. Hemoconcentration as evidenced by elevation of red cell hematocrit or plasma protein above normal ranges was not encountered in the absence of burns or complicating clostridial myositis. Despite restorative therapy, anemia and hypoproteinemia were the rule during convalescence. Quantitative improvements in blood volume and in concentration of plasma protein and hemoglobin did not occur in response to replacement of plasma and blood. No evidence of overdosage in plasma and whole blood therapy was detected. Dehydration and azotemia were common in early convalescence. In fulminating clostridial myositis

with edema, plasma protein concentration and blood volume fell rapidly. Erratic effects were obtained from sulfonamide therapy. There were 17 deaths among the 100 ground force casualties and 2 deaths among 14 patients with flak wounds.

Archives of Neurology and Psychiatry, Chicago

54:1-74 (July) 1945

- Extinction and Precipitation of Cutaneous Sensations. M. B. Bender.—p. 1.
Man's Frontal Lobes: Critical Review. D. O. Hebb.—p. 10.
*Polycythemia as Neurosurgical Problem: Review, with Reports of 2 Cases. J. H. Drew and F. C. Grant.—p. 23.
Hypothalamic Attacks with Thalamic Lesion: I. Physiologic and Psychologic Considerations. G. L. Engel and C. D. Aring.—p. 37.
Id.: II. Anatomic Considerations. C. D. Aring and G. L. Engel.—p. 44.
Thyroid Function of Manic-Depressive Patients Evaluated by Determinations of Serum Iodine. Evelyn B. Man and E. Kahn.—p. 51.

Polycythemia as Neurosurgical Problem.—Drew and Grant direct attention to the frequency of lesions of the central nervous system in polycythemia. Of 62 patients with this condition at the Hospital of the University of Pennsylvania in the last fourteen years, changes of this nature ranging from facial weakness to complete hemiparesis or stupor have been present in 13. In a case in which a chronic subdural hematoma was associated with polycythemia the latter had disappeared after the removal of the hematoma but showed a tendency to return five months after the operation. Literature on the coincident occurrence of expanding intracranial mass lesions and polycythemia revealed 9 cases in which the diencephalic region was not involved. In another patient papilledema of a high degree was associated with polycythemia. The occurrence of a true expanding intracranial mass lesion with polycythemia is rare, but the coincidental occurrence of papilledema and polycythemia is somewhat more common. The cause and effect relationship between polycythemia and disease of the central nervous system is becoming increasingly well documented, but the volume of work done is not yet sufficient to warrant its being recognized as an established fact. Polycythemia with papilledema must be considered as a possible diagnostic and operative problem for the neurosurgeon.

Archives of Physical Medicine, Chicago

26:485-538 (Aug.) 1945

- Poliomyelitis: Differential Diagnostic Problems Encountered in Epidemic. A. T. Steegmann and Kathryn Stephenson.—p. 485.
Freezing Treatment of Tumors: Preliminary Communication. F. M. Allen, F. K. Safford Jr. and L. W. Crossman.—p. 499.
Analysis of WAC Emergency Physical Therapy Training Program. F. A. Hellebrandt.—p. 502.
*Challenge of Crutches: II. Crutch Walking: Muscular Demands and Preparation. G. G. Deaver and Mary E. Brown.—p. 515.

Crutch Walking: Muscular Demands and Preparation.—The five muscle groups needed particularly for manipulation of crutches are, in order of importance, (1) flexors of the arms to move the crutches forward, (2) extensors of the forearms to hold the elbows stiff, so that they do not buckle when the weight of the body is placed on the hands and when the body weight is raised from the floor, (3) finger and thumb flexors to permit grasping the crutches, (4) dorsiflexors of the wrist to keep the hands in the correct positions on the hand pieces and (5) shoulder girdle depressors and downward rotators to support the body by means of the crutches when it leaves the floor. Crutches are invaluable aids toward attaining better balance and locomotion. Preparation for crutch walking includes a muscle test to discover the extent of muscular weakness, an exercise program to develop strength in the muscle groups necessary for crutch walking and instruction in how to stand and balance with crutches before taking any steps. For patients who will use crutches, it is good medical practice to prescribe an exercise program for the specific muscle groups used in crutch walking. The exercises are grouped as (1) bed or mat exercises, (2) wheel chair exercises, (3) mat exercises, (4) standing exercises with a bar or any other support, (5) walking exercises with support other than crutches and (6) standing exercises with crutches. Deaver and Brown stress that these exercises are elementary and should be learned by every one who plans to use crutches for an indefinite period. Other crutch balancing exercises should follow these, but they differ according to the crutch gait to be used.

Archives of Surgery, Chicago

51:1-68 (July-Aug.) 1945

- *Diagnosis and Treatment of Strictures of Aqueduct of Sylvius (Causing Hydrocephalus). W. E. Dandy.—p. 1.
Chronic Sclerosing Pancreatitis Causing Complete Stenosis of Common Bile Duct. L. W. Petersen and W. H. Cole.—p. 15.
Penicillin: Its Topical Use as Bacteriostatic Agent for Palliative Treatment of Chronic Stasis Ulcers of Lower Extremities. D. L. Lovell.—p. 22.
Trans thoracic Operative Approach for Traumatic Lesions of Spleen. J. Burke and T. T. Jacobs.—p. 28.
Early Effects on Dogs of Section of Eighth Cervical Segment of Spinal Cord and Their Bearing on Shock. D. B. Phenister, L. Eichelberger and C. H. Laestar.—p. 32.
Hemodynamic and Biochemical Changes in Dogs Subjected to Section of Spinal Cord: Changes in Dogs Surviving Operation for Protracted Periods. L. Eichelberger, C. H. Laestar and D. B. Phenister.—p. 42.
Fragmentation and Dissolution of Gallstones by Chloroform. J. K. Narat and A. F. Cipolla.—p. 51.
Cleansing of Oil-Covered Skin and Burns. L. Schwartz and H. C. Mason.—p. 55.
*Nitrogen Balance Studies on Surgical Patients Receiving Amino Acids: Observations on Patients with Obstructing Lesions of Esophagus and Stomach Receiving Amino Acids by Parenteral Injections as Exclusive Source of Protein. D. D. Kozoll, W. S. Hoffman and K. A. Meyer.—p. 59.

Hydrocephalus Caused by Strictures of Aqueduct of Sylvius.—According to Dandy, the diagnosis of a stricture at the aqueduct is simple in infants. If the dye test (phenolsulfonphthalein) shows an obstruction in the ventricular system, the obstruction will be either at the aqueduct or at the foramina of Magendie and Luschka. If the inion is low, the obstruction is at the aqueduct. The height of the inion is all important. For children over 1 year old the diagnosis can now usually be made by ventriculography and without operation and frequently without ventriculography. In most of these a partial occlusion of the aqueduct has doubtless existed long before becoming complete. An oversized head, with MacEwen's sign (cracked pot sound) and an inion normally placed or at times lower than normal, indicates hydrocephalus without a space-occupying lesion (a tumor) in the posterior cranial fossa. By exclusion, the lesion is a stricture of the iter of Sylvius. When ventriculography is used, the shape of the shadow in the 'aqueduct' of Sylvius—funnel shaped or triangular—will frequently make the diagnosis without an unnecessary cerebellar operation for its disclosure. A third ventriculostomy by the temporal approach is the operation of choice for hydrocephalus due to a stricture of the aqueduct. It is much superior to the anterior approach because (1) external hydrocephalus does not follow, (2) it is not necessary to section a nerve (the optic nerve must be sectioned in the anterior approach) and (3) the scar is under the hair. Cures are attained in most cases when the patient is more than a year old, but in infants a perfect result is obtained in very few cases. One may question the wisdom of operating on this group, though operation is probably worth while when the head is not over 50 or 52 cm. in circumference at the time of operation.

Nitrogen Balance in Patients Receiving Amino Acids.

—Kozoll and his associates used parenteral injections of amino acids as the only source of protein during a study of nitrogen balance in 14 cases of obstructing lesions of the esophagus or stomach. Positive nitrogen balance was achieved in 13 of the 14 cases. The quantity of amino acids required by parenteral injection for positive nitrogen balance usually varied between 60 and 90 Gm. per day. At times doses of 120 Gm. were more successful in producing larger positive balances. The serum protein concentration rose during treatment in 4 cases, remained stationary in 2 and fell in 8. The serum albumin concentration rose in 6 cases and declined in 8. The following factors may have been involved in the failure of the serum protein to rise in response to the attainment of positive nitrogen balance: (a) Hemodilution, which occurred in most of the cases, masks an increase in serum protein. (b) The severity of the protein deficiency in the type of cases studied here may be so severe as to require a much longer period of positive nitrogen balance before the entire protein deficiency can be rectified. (c) Gain in nitrogen may be used up in the growth of metastases from carcinoma. (d) The albumin synthesizing mechanisms of the body may be interfered with by the presence of carcinoma with hepatic metastases or by a severe protein deficiency of the liver. Therapy with parenteral injections of amino acid should be

accompanied with an effort to meet the requirements of carbohydrate, minerals and vitamins. A minimal daily carbohydrate intake of 300 Gm should be assured. Therapy with parenteral injections of amino acid is only partly successful when the nitrogen losses are excessively high, since in such circumstances it is impossible to inject the required amounts of amino acids. In clinical practice two adjuvants to enhance the effects of therapy with parenteral injections of amino acid are recommended: (a) oral, intragastric or transgastric feedings of protein or amino acids and (b) transfusions of whole blood.

Bulletin of Johns Hopkins Hospital, Baltimore

76:221-302 (June) 1945

- Effect of Penicillin in Experimental Intestinal Obstruction. Pichonny. Report on Closed Loop Studies. W H Harper and A Blum—p 221
 *Pulmonary Embolism from Obscure Sources. A O Hampton, A G Prandoni and T J King—p 245
 Further Observation on Treatment of Yaws with Penicillin. R White and R Austrian—p 274
 Isolation of Thromboplastin from Lung Tissue. W H Howell—p 295

Pulmonary Embolism—Hampton and his associates report 10 cases in which acute chest conditions are thought to have been caused by pulmonary embolism, with or without infarction, or with incomplete infarction, from various venous sources. The patients were at work, had no heart disease and gave no history of known phlebitis. A possible exception may be noted in case 8, in which a thrombosing hemorrhoid was noted at the time of the acute chest episode. None of the patients were admitted with a correct diagnosis. Phlebograms, roentgenograms and electrocardiograms are helpful in diagnosis. Such tests should be employed when a relatively dry area of consolidation is found in the lungs without specific bacteriologic findings, and in which dyspnea or chest pain is an important symptom. The onset may be insidious or it may closely simulate coronary occlusion, pneumonia, angina pectoris or pericardial effusion, in 1 case the roentgenogram resembled that of metastatic carcinoma. Cases of repeated "pleurisy" or "pneumonia," especially if bilateral, should be suspected of being due to pulmonary embolism. Probable sources of emboli have been found in leg veins, pelvic veins, thrombosed hemorrhoidal veins and veins of the prostatic and periprostatic plexus. In certain cases the source may remain unidentified. The authors have used heparin and dicumarol anticoagulant therapy plus rest and elevation of the part affected by thrombosis or phlebitis. They have not observed embolism after institution of such treatment.

Bulletin New York Academy of Medicine, New York

21:393-448 (Aug) 1945

- Air Borne Infection: Rationale and Means of Disinfection of Air. S Mudd—p 393
 Experiences with Rheumatic Fever in the Army. J S Wright—p 419

21:451-502 (Sept) 1945

- The Physician and the Problem of Alcoholism. H W Haggard—p 451
 Recent Advances in Treatment of Malaria. J A Shannon and D P Earle Jr—p 467
 Cardiac Enlargement: Its Recognition and Significance. H I Underhill—p 482

Canadian Medical Association Journal, Montreal

53:99-198 (Aug) 1945

- Medical Aspects of Normandy Invasion. M C Watson—p 99
 Mental Hygiene of Later Life. S R Tiverch—p 111
 Some Mental Hygiene Principles. G H Stevenson—p 115
 Study of Personality Factors Among Venereal Disease Patients. G O Watts and R A Wilson—p 119
 Chronic Right Sided Pain in Women. H B Atlee—p 127
 Problem of Damaged Artery in Foreword Surgery. W I Mustard—p 128
 Traumatic Arterial Spasm: Report of Case. W C Mackenzie and W G Breckenridge—p 130
 Pulmonary Embolism—A Review—p 132
 Chromoblastomycosis Due to New Species of Fungus. First Canadian Case. I Berger, M Brudry and E Grumond—p 138
 Internal Derangements of Knee in Military Practice. H I J Kellum—p 143
 Severe Anemias of Pregnancy and Postpartum State. J I McArthur and A D Campbell—p 148
 Procedure in Treatment of Heart Disease. D M Baltun—p 150
 Intramedullary Transfusion. J O'Connor Jr—p 156
 Stone in Lower (Pelvic) Ureter. E R Hall—p 157
 Stone in Lower (Pelvic) Ureter. J Breslin—p 160
 Islet Cell Tumors of Pancreas. L J Breslin—p 160
 Possible Explanation of Conflicting Results in Experiments with Transplanted Tumors. H C Connell and J A Munro—p 162

Journal of Clin. Endocrinology, Springfield, Ill.

5:203-246 (May-June) 1945

- Titers of Gonadotropins in Urine of Aged Eunuchs. J B Hamilton, H R Catchpole and C C Hawke—p 203
 Antithyroid Drugs. I Tetramethylthiourea and Diethylthiourea. R H Williams—p 210
 Id. II. Paravanthine. R H Williams with technical assistance of Jean B Peters—p 217
 Excretion of 17 Ketosteroids by Diabetic. S Miller and H I Myron—p 220
 Chronic Hemospermia: Its Origin and Treatment with Estrogen. C Huggins and D I McDonald—p 226

Journal of Clinical Investigation, Boston

24:405-610 (July) 1945 Partial Index

- Gelatin as Plasma Substitute: Effects of Intravenous Infusion of Gelatin on Cardiac Output and Other Aspects of Circulation of Normal Persons, of Chronically Ill Patients and of Normal Volunteers Subjected to Large Hemorrhage. A G Fletcher Jr, J D Hardy, C Riegel and C E Koop—p 405
 Effect of Methyl Testosterone on Urinary 17 Ketosteroids of Adrenal Origin. F C Reftanctin Jr, A P Forbes, F Albright, E Donaldson and E Carroll—p 416
 Traumatic Shock. H A Frank, A M Seligman and J Pine—p 435
 *Cold Agglutinins: I. Occurrence of Cold Isohemagglutinins in Various Conditions. M Linblad, O L Peterson, H E Allen, B A Samper and Mildred W Barnes with technical assistance of Muriel B Stone—p 451
 Id. II. Cold Isohemagglutinins in Primary Atypical Pneumonia of Unknown Etiology with Note on Occurrence of Hemolytic Anemia in These Cases. M Linblad, O L Peterson, H E Allen, B A Samper and Mildred W Barnes—p 458
 Id. III. Observations on Certain Serologic and Physical Features of Cold Agglutinins in Cases of Primary Atypical Pneumonia and of Hemolytic Anemia. M Linblad, O L Peterson and Mildred W Barnes, with technical assistance of Muriel B Stone—p 474
 Studies on Pain: Quantitative Measurements of Two Pain Sensations of Skin, with Reference to Nature of "Hyperalgesia of Peripheral Nerve." N Bigelow, I Harrison, Helen Goodell and H G Wolff—p 503
 Circulation in Experimental Neurogenic Hypertension. R I Bins, C B Thomas and E C Waples—p 513
 Nitrogen Metabolism in Acute Infections. C M Grossman, F S Sapington, B A Burrows, P H Trivette and J P Peters—p 52
 *Antistreptolysin Titers in Cases of Filariasis with Recurrent Lymphangitis Among Military Personnel. H M Rose, J I Culbertson and Miriam O Lipman—p 532
 Protective Effect of Vaccination Against Induced Influenza. A F Francis Jr, J L Salk, H F Peterson and P N Brown—p 536
 Maturation and Destruction of Transfused Human Reticulocytes: Evaluation of Reticulocyte Experiments for Measurement of Hemoglobin Metabolism. I J Young and J S Lawrence—p 554
 Calcium Metabolism in Nephrosis: I. Description of Abnormality in Calcium Metabolism in Children with Nephrosis. K Emerson Jr and W W Beckman—p 564
 Studies in Ascorbic Acid with Special Reference to White Layer: I. Description of Method and Comparison of Ascorbic Acid Levels in Whole Blood Plasma, Red Cells and White Layer. Rose Fulsche—p 573
 Metabolic Alterations Following Thermal Burns. I. Nitrogen Balance in Experimental Burns. Fredrick Meyer, S Joseph, I W Hirschfeld and W F Abbott—p 579
 Use of Sodium P Ammoniohippurate for Functional Evaluation of Human Kidney. H Christ, J Redish, W Colding, H A Ranges and H W Smith—p 583
 *Treatment of Lobar Pneumonia with Penicillin. W S Lillett, J I McCormack and Margaret J Camber—p 589
 Use of Penicillin in Local Treatment of Pneumococcal Infection. W S Lillett, J I McCormack and Margaret J Camber—p 595

Cold Agglutinins—Tests for cold agglutinins using erythrocytes from normal group O donors, were carried out by Finland and his associates on 1,069 subjects, including healthy persons and patients with a variety of conditions, mostly respiratory tract infections. Cold agglutinins in titers of 40 or higher were found in 137, or 68.5 per cent, of 200 characteristic cases of primary atypical pneumonia of unknown etiology, in 5 of 11 cases in which this was the probable diagnosis and in 4 of 7 cases of various kinds of hemolytic anemia. In only 10 or 12 per cent of the remaining 851 cases were cold agglutinins demonstrated in similar titer. In some of these 10 cases and of the few others in which cold agglutinins were demonstrated in lower titers atypical pneumonia may have played a part. It is suggested that the development of cold agglutinins is related to the causative agent of primary atypical pneumonia and may serve as a diagnostic aid in this disease.

Antistreptolysin Titers in Filariasis—Rose and his co-workers determined antistreptolysin titers in the blood of 45 soldiers suffering from recurrent lymphangitis associated with filariasis contracted in the South Pacific. The titers were within

normal limits in 39 of the 45 cases. The attacks of lymphangitis in these soldiers appeared to be due to allergic reactions to the parasitic infection; secondary streptococcal infections were of little or no consequence as an etiologic factor.

Penicillin in Lobar Pneumonia.—Tillett and his associates report the results obtained in 110 cases of pneumococcal pneumonia treated with penicillin. There were 7 fatalities in this group, a mortality of 6.3 per cent. Among the patients who recovered, the effectiveness of penicillin was deemed definite in 93 and equivocal in 10 cases. Bacteremia, which occurred in 40 of the patients (36.3 per cent), was successfully eliminated. This result constitutes one of the most striking effects of penicillin therapy in pneumonia. The total amounts of penicillin employed have ranged from 120,000 to 200,000 units in cases of moderate severity and from 150,000 to 400,000 units in serious cases, depending on the evidence of response noted in the first twenty-four to forty-eight hours of treatment. In 3 instances infections caused by sulfonamide fast pneumococci were effectively treated with penicillin. No toxic reactions referable to penicillin have been noted.

Journal of International College of Surgeons, Chicago

8:209-308 (May-June) 1945

- Rehabilitation G. M. Pierol —p. 209
Dermoplasty of Healed Burned Dorsum of Hand J. I. Pick —p. 217
Use of Single Massive Doses of Sulfonamide Compounds: Preliminary Report B. I. Golden and S. W. Meyer —p. 225
Cancer of Colon: Survey of Current Trends in Diagnosis and Treatment M. Behrend —p. 233.
"Hernia of Pelvic Floor" versus "Prolapse of Uterus and Rectum". Problem of Nomenclature, Pathology and Treatment C. W. Barrett —p. 242.
Present Status of Continuous Caudal Analgesia in Obstetrics C. B. Lull —p. 257.
Survey of Surgical Results in Cancer W. S. Bainbridge —p. 261

Journal of Lab. and Clinical Medicine, St. Louis

30:639-724 (Aug.) 1945

- Pathologic Study of Tsutsugamushi Disease (Scrub Typhus) with Notes on Clinicopathologic Correlation. F. B. Settle, H. Pinkerton and A. J. Corbett —p. 639
Coagulation Test for Rh Sensitization A. S. Wiener —p. 662.
Detection of Rh Sensitization. Evaluation of Tests for Rh Antibodies. I. K. Diamond and N. M. Abelson —p. 668
Studies in Hodgkin's Syndrome. III. Relationship of Tubercle Bacilli to Hodgkin's Syndrome H. A. Hoster, C. A. Doan and Marijellen Schumacher —p. 675
Bl. IV. Therapeutic Use of Radioactive Phosphorus H. A. Hoster and C. A. Doan —p. 678
Relationship Between Diet and Mechanisms for Defense Against Bacterial Infections in Rats I. J. Berry, June Davis and T. D. Spicer —p. 684
Treatment of Experimentally Induced Type I Pneumococcus Pneumonia in Albino Rats. Comparative Study of Treatment of Pneumonia with Sulfadiazine Alone and in Combination with Sodium Bicarbonate I. H. Loughlin, R. H. Bennett, I. Weh and Mary F. Flannery —p. 695
Action of Beta-Dimethylaminoethyl Benzilate Hydrochloride, a Synthetic Antispasmodic H. M. Lee, C. C. Scott and K. K. Chen —p. 700
Significance of Very Low Values for Blood Urea Nitrogen R. O. Bowman, I. I. Crowell and Laura P. Olson —p. 706

Detection of Rh Sensitization.—Employment of a reliable method of detecting Rh antibodies is an important aid in the management of pregnancies of Rh negative women whose husbands are Rh positive. Diamond and Abelson evaluate the following tests for the detection of Rh sensitization: (1) the biologic test, (2) the modified compatibility or tube-agglutination test, (3) the "blocking" test, (4) the capillary tube test and (5) the open slide test. The biologic test possesses very limited clinical usefulness and should be used not to supplant but rather to supplement the *in vitro* methods. Of the latter the open slide test, when used alone, is by far the simplest and most reliable. It is particularly valuable as a screening test in following obstetric patients and as a confirmatory test for compatibility of blood donor and recipient. For a more refined diagnosis the tube-agglutination and blocking tests used in conjunction with each other possess a high degree of reliability and yield valuable information concerning the stage of immunization to which the sensitized patient has progressed.

Journal of Pediatrics, St. Louis

27:89-204 (Aug.) 1945

- Crying of Newly Born Babies II Individual Phase C. A. Aldrich, C. Sung and Catharine Knop —p. 89.
Case History of Twins Breast Fed on Self Demand Regimen. Genevieve Traubman, Grace J. Pilafian and Ruth M. Kraft —p. 97
Further Records of Self Demand Schedule in Infant Feeding. Narrative by Mother, with Discussion by Pediatrician Frances P. Summarin and P. A. McLendon —p. 109
*Diagnosis and Management of Severe Infections in Infants and Children. Review of Experiences Since Introduction of Sulfonamide Therapy IV Pneumococcus Meningitis A. T. Hartmann, Frances M. Love, Dorothy Wolff and Barbara S. Kendall —p. 115

Pneumococcal Meningitis in Children.—Hartmann and his associates review the clinical, laboratory and postmortem studies of all cases of pneumococcal meningitis admitted to the St. Louis Children's Hospital from the time the first sulfonamide drug was available for treatment (December 1936) to Nov. 1, 1944. The following conclusions have been reached: Apparently any type of pneumococcus may cause meningitis. The pathway by which the pneumococcus may gain entrance to the meninges and spinal fluid varies and should whenever possible be established because of its possible surgical implications. The incidence of "surgical" mastoiditis as a port of entry is much greater than in meningococcal but also apparently much smaller than in hemolytic streptococcus infections. When the temporal bone is involved there seems to be a characteristic pathologic picture which includes (1) a high incidence of purulent labyrinthitis, (2) the formation of "empyemic membrane," (3) peculiar organization of bubbly exudate which leads to pseudogland formation and (4) a high incidence of bilateral involvement. A diagnosis of pneumococcal meningitis can be made with certainty only by lumbar puncture and proper examination of the spinal fluid. The great value of early diagnosis far outweighs any theoretical danger imposed by lumbar puncture. Treatment should be started as early as possible with penicillin and sulfonamide in high dosage. Mortality seems more related to delayed diagnosis and institution of intensive therapy than to any other single factor. Sequelae such as hydrocephalus, epilepsy and mental retardation may be expected, especially when the infection occurs during infancy and is not eradicated immediately.

Journal of Thoracic Surgery, St. Louis

14:1-338 (Aug.) 1945

- *Studies in Oleothorax: I. Bacteriostatic Action of Oils on Tubercle Bacilli. P. D. Crimm and V. F. Martos —p. 265
II. Use of Oils in Disinfectant Oleothorax and in Recapsulation of Lung in Tuberculous Empyema: Preliminary Report P. D. Crimm and J. J. Westra —p. 270
Benign Tumors of Esophagus: Report of 3 Cases R. Adams and W. B. Hoover —p. 279.
Relaxing Thoracoplasty. Preliminary Report O. C. Brantigan, T. B. Aycock, R. Hoffman and H. J. Welch —p. 287
*Importance of Ascorbic Acid (Vitamin C) in Chest Surgery E. del Zerman —p. 309.
Tumor of Lung Due to Cryptococcus Histolyticus (Blastomycosis) B. A. Dorrer, I. Friedlander, J. J. Wiles and F. W. Simson —p. 322
Occlusion of Superior Vena Cava Due to Syphilitic Mediastinitis. Collateral Circulation After Nineteen Years F. D. Zeman —p. 370

Action of Oils on Tubercle Bacilli.—Crimm and Martos report experiments in which Long's synthetic medium, Corper's egg medium and glycerol-peptone agar were used for culturing various strains of tubercle bacilli. The bacteriostatic action of peanut oil, cod liver oil and gomenol for the H₂ strain and the bovine and avian types of *Mycobacterium tuberculosis* was determined. It was found that peanut oil is inhibitory for H₂ and other virulent human strains in a concentration of 5 per cent and for the bovine type in a concentration of 2 per cent. For the avian type the limit of tolerance was not determined, but it is greater than a concentration of 10 per cent. Cod liver oil is bacteriostatic for the human, bovine and avian types of *Myco tuberculosis* in 1 per cent concentration. Gomenol is bacteriostatic for both human and avian types of *Myco tuberculosis* in 5 per cent concentrations. Complete inhibition of the bovine type occurred in 1 per cent concentration. Prolonged incubation of the H₂ strain and a virulent human strain isolated in this laboratory with peanut oil, cod liver oil and gomenol does not alter the virulence or the acid fastness of the organisms, although the colony morphology is altered. This observation

that the virulence of the tubercle bacillus is not altered by the oils differs from the results obtained by other investigators. The oils available today are more highly purified than those of a decade ago and have been freed from the substances responsible for the bacteriolytic action. The authors concur that these oils have an inhibitory action on the growth of the tubercle bacillus. However, the subsequent growth of the organisms on a rich medium and their normal virulence when injected into guinea pigs indicate that the oils adherent to the tubercle bacilli inhibit their growth by a physical rather than by a chemical action.

Vitamin C in Chest Surgery.—Zerbini studied the amount of vitamin C in the blood and the tissues of patients with chronic surgical diseases of the lung and esophagus. Twenty-two patients were studied before and after operation. The average ascorbic acid content found just after the admission of the patients was 0.15 mg. per hundred cubic centimeters. In 1 patient with a normal plasma ascorbic acid level before operation this level declined to practically zero after operation. In other cases an attempt was made to raise the plasma ascorbic acid level before and after operation so as to aid in the scar formation. The patients were given 1,000 mg. of ascorbic acid in a single period of twenty-four hours. This was divided into small doses of 100 mg. at a time. In a typical case it was seen that in twenty-four days of postoperative observation the level in the plasma was progressively increased to 0.85 mg. per hundred cubic centimeters, which is almost the normal level. The increase of ascorbic acid in the plasma was slow, although large doses were employed. The determination of the ascorbic acid in the white cells and platelets gave different results in different patients. When the general condition was good and the patient was a good risk, the white cell and platelet level did not change with the operation, even when the plasma level was zero. In 1 patient with esophageal cancer and artificial alimentation through a gastrostomy, the plasma and the white cells and platelets were both found deprived of ascorbic acid, a condition which represents a prescorbutic state. The amount of ascorbic acid in muscle and lung tissue removed during the operation seems to be below the values considered normal. It is concluded that every patient with a chronic surgical chest condition should be given high doses of ascorbic acid before and especially after important surgical procedures.

Kansas Medical Society Journal, Topeka

46:253-288 (Aug.) 1945

- Sciatica Secondary to Retroplused Intervertebral Disks. C. Rombold.—p. 253
Manic Depressive Psychosis, Depressed Phase: Case Report. T. L. Foster.—p. 257.
Medical Board and Its Responsibility to the Public. J. F. Hassig.—p. 259.

46:289-324 (Sept.) 1945

- Epigastric Hernia: Factor in Upper Abdominal Diagnosis. G. R. Peters and C. C. Nesselrode.—p. 289.
Preventive Psychiatry. F. A. Carmichael.—p. 292.

Kentucky Medical Journal, Bowling Green

43:197-218 (Aug.) 1945

- Observations and Experiences of Forty Years in General Practice. W. L. Tyler.—p. 199.
Ophthalmic Geriatrics. M. J. Stern.—p. 202.
Coronary Heart Disease. W. C. Gettelfinger.—p. 204.
Coronary Heart Disease. C. Morse.—p. 206.

43:219-240 (Sept.) 1945

- Sulfadiazine Death Due to Anuria. C. Baron.—p. 227.
Radiation Hazards in Medical Practice. D. B. Harding.—p. 228.
Tuberculosis. H. L. Houston.—p. 232.

Missouri State Medical Assn. Journal, St. Louis

42:461-532 (Aug.) 1945

- Diseases of Bile Duct. J. M. McCaughan.—p. 477.
Carcinoma of Prostate Gland and Benefits of Diethylstilbestrol or Orchiectomy. C. A. Wattenberg.—p. 482.

42:533-600 (Sept.) 1945

- Bronchoscopy: Its Role in Diagnosis and Treatment of Pulmonary Tuberculosis. F. G. Bell and B. Schaff.—p. 549.
Enrichment of Bread. W. H. Ohnsted.—p. 563.

New England Journal of Medicine, Boston

233:229-264 (Aug. 23) 1945

- *Ligation of Inferior Vena Cava for Prevention of Pulmonary Embolism: Report of 2 Cases. E. A. Gaston and H. Folsom.—p. 229.
*Hazard of Transfusion Malaria After the War. A. D. Rubenstein, M. H. Shulman and D. Merrill.—p. 234.
Gastroscopic Studies in Naval Personnel with Chronic Seasickness. E. B. Benedict and R. S. Schwab.—p. 237.
Practical Aspects of Oxalate Metabolism. H. Jeghers and Rosemary Murphy.—p. 238.
Tuberculosis of Mediastinal Lymph Nodes.—p. 255.
Jejunal Obstruction Due to Congenital Diaphragm: Meconium Peritonitis.—p. 257.

233:265-286 (Aug. 30) 1945

- Relation Between Vagal Activity and Auricular Fibrillation in Various Clinical Conditions. M. D. Altschule.—p. 265.
Fibrin Foam as Hemostatic Agent in Suprapubic Prostatectomy. W. C. Quinby and E. K. Landsteiner.—p. 267.
Nylon Backing for Dermotome Grafts. R. W. Green, S. M. Lenson and C. C. Lund.—p. 268.
Acute Hallucinoses as Complication of Addiction to Amphetamine Sulfate: Report of Case. J. Norinan and J. T. Shea.—p. 270.
Neurology. H. H. Merritt.—p. 272.
Congenital Mediastinal Cyst Arising from Esophagus.—p. 278.
Tuberculosis of Vertebrae, with Extension to Dura.—p. 281.

Ligation of Inferior Vena Cava for Prevention of Pulmonary Embolism.—Gaston and Folsom assert that necropsies disclose that in a high percentage of cases of pulmonary embolism the emboli originated in veins that were direct or indirect tributaries of the inferior vena cava. Ligation of the inferior vena cava below the level of the renal veins, although an operation of some magnitude, is compatible with recovery in seriously ill patients. Caval interruption is effective in preventing the embolic sequelae of thrombosis of the pelvic veins, whether this thrombosis is primary in the pelvic veins or secondary to a propagating thrombophlebitis originating in the veins of the legs. Even following ligation of the common femoral veins an adequate collateral circulation develops around the obstructed cava, and peripheral edema eventually disappears. The authors report 2 cases in which caval interruption effectively prevented further pulmonary infarction. The operation was followed by complete recovery in each case. Most helpful in sustaining the patient through the critical postoperative period were swathing the feet, legs and thighs tightly in elastic bandages to help prevent shock due to the rapid withdrawal of edema fluid from the circulation, the early use of oxygen and adequate intravenous infusions of plasma and whole blood.

Hazards of Transfusion Malaria After War.—Rubenstein and his associates state that, of the 12 cases of post-transfusion malaria reported in Massachusetts since 1929, all but 3 were quartan. The predominance of quartan infections is evidence that in a nonendemic area the problem of post-transfusion malaria is intimately linked with the ability of Plasmodium malariae to remain latent for long periods. Because several weeks may elapse between the transfusion and the onset of malaria in the recipient, the causal relations of these events may not be recognized. Post-transfusion malaria when recognized and promptly treated is not usually fatal.

New Orleans Medical and Surgical Journal

98:1-48 (July) 1945

- Ureteral Calculi: Unusual Case with Five Stones in One Ureter. H. T. Beacham and W. D. Beacham.—p. 1.
Case of Perirenal Abscess. E. A. Fielden.—p. 4.
Simple Treatment for Sebaceous Cyst. J. A. Danna.—p. 5.
Sinus Disease in Childhood. G. J. Taquino.—p. 8.
Normal and Abnormal Physiologic Effects of Tropical Climate. G. L. Burch.—p. 14.

98:49-90 (Aug.) 1945

- Some Comments on Early Literature of Geriatrics in America. W. D. Postell.—p. 49.
What Is Dyspnea? S. Jacobs.—p. 51.
Thioracil in Thyrotoxicosis. G. McHardy and D. C. Browne.—p. 55.
Plasmochin Intoxication: Report of Case. S. B. Nadler and E. J. Crawford.—p. 61.
Sulfamerazine in Treatment of Genitourinary Infections: Analysis of 151 Consecutive Cases. W. E. Kittredge and A. J. Butt.—p. 63.
Postoperative Evisceration: Part I. Comparative Study. V. D'Agianini.—p. 65.
Clinical Suggestions for Endocrine Diagnosis and Treatment. J. H. Hutton.—p. 72.

Rhode Island Medical Journal, Providence

28:482-552 (July) 1945

- Advantages and Disadvantages of Barbiturates in Obstetrics C. D. Irving—p 493
- Smoke and Health. C A Mills—p 496
- Coordinating Industrial Medicine and Industrial Hygiene in Modern Industrial Practice. C. O. Sappington—p 501

28:553-624 (Aug) 1945

- Surgery of Veins of Legs Varicosity and Some Problems in Thrombosis J. Homans—p 565
- Internal Derangements of Knee Joint: X-ray Diagnosis J. Gershen Cohen—p 570
- Discussion of Causes of Cancer. S P. Reimann—p 573.
- Independence Day—1945: Public Statement from Dr. J. T. Kennedy to Governor McGrath—p 587
- Paying for Medical Care Under Rhode Island Public Assistance Act: Report of Experiment in Method of Payment for Medical Care in Towns of East Providence, Bristol and Warren Margaret D Ward.—p 601

Surgery, Gynecology and Obstetrics, Chicago

81:225-336 (Sept.) 1945

- Lallacy or Surgical Gut (Catgut) Tying Fluid as Tissue Irritant J. O. Bower—p 225
- Theca Cell Tumors of Ovary: Clinical and Pathologic Study of 23 Cases (Including 13 New Cases), with Review L. A. Bannier and M. B. Dockerty—p 234.
- *Rationale of Calcium, Phosphorus and Vitamin D Therapy in Clinical Hyperthyroidism I. D. Puppel, H. T. Gross, E. K. McCormick and E. Herdler—p 243.
- Posterior Approach for Arthrodesis and Other Operations on Shoulder. P. H. Harmon—p 266
- *Massive Extrusions of Lumbar Intervertebral Disk A. VerBruggen.—p 269
- Lung Abscess: Analysis of 244 Cases A. R. Vail—p 278
- Volvulus of Sigmoid Colon. Report of 25 Cases W. D. Griffin, G. R. Barron and K. A. Meyer—p 287
- Significance of Tumor Cells in Serous Effusions A. H. Homigan.—p 295.
- Experimental Studies in Peripheral Nerve Surgery: IV. Effect of Infection on Regeneration and Functional Recovery. L. Davis, G. Peirce and F. Miller—p 302
- Infected Pilonidal Sinus L. S. Davies and K. W. Starr—p 309
- Lacerations of Perineum and Their Repair. Study Based on 2,328 Perineal Cases L. E. Phancuf—p 320
- Injury of Dorsum of Hand B. J. Anson, R. R. Wright, F. L. Ashley and J. Dykes—p 327
- Method for Surgical Obstruction of Fallopian Tube Animal Experimentation. E. G. Krug—p 331

Therapy in Clinical Hyperthyroidism.—Puppel and his associates found that calcium, phosphorus and vitamin D medication is of value in the treatment of clinical hyperthyroidism. Especial attention must be given to calcium, which in the usual diet is barely sufficient for a normal person. Hyperthyroid patients require about 2 Gm of calcium daily to maintain them in calcium retention. This is at least twice the optimum calcium requirement for normal adults. Three Gm daily is a more adequate amount to restore the depleted calcium. Phosphorus requirements are similarly increased. Eleven hyperthyroid patients maintained on a low intake of calcium, averaging 474 mg per day over a period of ninety days, showed an average loss of 459 milligrams per day. When 5 of these patients were further investigated on an adequate intake of calcium averaging 2,410 mg per day over a period of eighty-one days, remarkable retention of calcium occurred which resulted in a positive balance of 362 mg. per day. The state of the phosphorus balance showed similar spectacular and beneficial changes. Retention occurred whether the calcium was fed or administered parentally. The authors supplemented high calcium and high phosphorus diets with four of the most common types of calcium salt. They were all effective in maintaining retention of calcium and phosphorus. However, 3 of the 11 patients received added amounts of phosphorus and vitamin D besides the added amounts of calcium in the form of dicalcium phosphate with viosterol. The latter seemed to promote increased retention of calcium of 200 to 1,000 per cent over that of patients receiving only added calcium or calcium and vitamin D in palatable doses. Hyperthyroidism in the presence of insufficient calcium and phosphorus intake often produced osteoporosis. Severe cases of osteoporosis may lead to osteomalacia and spontaneous fractures. Gross deformities and dwarfism may result. These complications of hyperthyroidism can be treated best by feeding of adequate calcium, phosphorus and vitamin D. Muscular, joint and bone pains can

frequently be best controlled by calcium, phosphorus and vitamin D therapy. Thyroid crisis still occurs in spite of adequate iodization and often in a patient who is refractory to iodine. The authors feel that preoperative calcium, phosphorus and vitamin D are important in iodine refractory and the precrisis states, as well as in the prevention of thyroid crisis. Calcium, phosphorus and vitamin D should especially be administered to hyperthyroid patients who do not come to surgery early.

Massive Extrusions of Lumbar Intervertebral Disks.—VerBruggen thinks that insufficient stress has been placed on the serious complications which may occur when the ruptured intervertebral disk is inadequately treated. The extrusion of a large part of a disk may so compress the cauda equina as to cause weakness of one leg with disturbance of urinary function or even a transverse cauda equina lesion with paraplegia and incontinence of the bladder and rectum. Most of the patients with the cauda equina lesions seen by the author languished for days, weeks or months without a correct diagnosis being made. In all of the cases the lesion was at the lower lumbar vertebrae. The history is characteristically cog wheel in type, and the signs are those of acute compression of the cauda equina. The symptom complex varied from slight weakness of the legs below the knee with saddle hypesthesia to severe sphincter disturbances. Of 9 patients seen, 8 were operated on and 1 died before anything could be done. They represent the serious complication seen in 300 consecutive cases of typical herniated nucleus pulposus. All but 1 of the 9 cases presented a history of backache for years, and all but 2 a history of both backache and sciatica for years. A history of trauma was obtained in 3 cases. The bladder mechanism was not seriously involved in only 1 case. Weakness and hypesthesia were observed in varying degrees. The Lasègue sign was positive in all the cases in which it was tested. The deep reflexes in the ankle were affected in all the cases. The spine was tender on deep pressure in 6 of 8 cases. The intervertebral space was narrowed at the site of the herniation of the involved disk in 5 of 9 cases. Early diagnosis and operation are essential, but recovery may be slow and incomplete, even if the diagnosis is made early.

United States Naval Med. Bulletin, Washington, D. C.

45:207-406 (Aug.) 1945

- *Cord Bladder. Restoration of Function by Transurethral Operation G. J. Thompson—p 207
- *Acute Infectious Mononucleosis Simulating Acute Abdominal Emergency: Report of 4 Cases Occurring Aboard Ship. G. M. Perisho and D. V. Sargent—p 215
- Inguinal Herniorrhaphy: Follow Up Report. J. J. Timmes—p 221.
- *Laboratory Histopathologic Study P. Michal—p 225
- Evaluation of Measures for Use Against Common Lungous Infections of Skin. Screening Tests by Means of Paired Comparisons on Human Subjects M. B. Sulzberger, H. C. Shaw and A. Knof—p 237.
- Clostridium Perfringens in Brittle Injuries: Rapid Identification by Simple Modification of Allenbury's Method. J. C. Norris and J. A. Fisher—p 249.
- Rheumatic Fever at Technical Training School S. M. Wheeler and H. S. Ingraham—p 253
- Penicillin in Persistent Diphtheria: Treatment of Patients with Repeated Positive Throat Cultures J. W. Skinner—p 264
- Diphtheritic Paralysis. E. G. Givhan Jr. and F. J. Mahon—p 267.
- Familial Portal Cirrhosis in Young Adults L. M. Jamison and L. A. Sivarese—p 270
- Standardized Clinical Photography G. S. Harris—p 277
- Clinical Masquerades of Malaria: Observations in South Pacific Combat Areas. A. S. Hyman—p 287
- Neuro-psychiatric Manifestations in Malaria D. J. Arbuse—p 304
- Psychiatric Preparations for Combat in Marine Division P. Solomon—p 310
- Treatment of Tropical Skin Diseases in South Pacific: An Outline R. R. M. McLaughlin—p 314

Transurethral Operation for Cord Bladder.—Thompson says that paralysis is so extensive in the vast majority of cases of cord injury that urination is impossible and remains so for many months. The distended bladder must be emptied. In the early phase of the paralysis the bladder of a few of these patients can be emptied by manual pressure applied in the suprapubic region. As time goes on these few usually find that the bladder cannot be completely emptied. The majority of paralyzed patients require drainage of the bladder through a catheter placed suprapubically through a stab wound, through a buttonhole incision in the perineal portion of the urethra or

through the penis. No matter where placed, the catheter must be irrigated regularly and changed at regular intervals. After a lapse of weeks or months, when the catheter is removed, some of these patients develop what is loosely called an automatic bladder. They void at irregular intervals but are usually incontinent to some degree; hence a urinal must be worn. If the indwelling catheter can be dispensed with, the patient's condition improves rapidly. Some patients will have spontaneous recovery of function. Patients who are unable to urinate after maximum nerve recovery has taken place can regain voluntary control of bladder function as the result of a properly performed transurethral resection of the vesical neck. It is important to remove a substantial amount of tissue. The resection of a few pieces from the posterior half of the vesical neck usually accomplishes nothing; tissue must be excised from the entire circumference of the outlet. Only in this way can the resistance of the retention mechanism be diminished sufficiently so that an increase of pressure within the abdomen, accomplished by straining, will squeeze the bladder dry. The most gratifying feature is that between urinations the patient has perfect control. Depending on fluid intake, four or more hours may elapse between urinations. If fluids are restricted in the evening, the patient can sleep all night. The author presents the histories of 5 patients. Voluntary bladder function was restored in all by transurethral resection of the hypertrophied internal sphincter. Prior to operation these patients had suffered from urinary retention and dribbling overflow incontinence. Since operation they have been able to void at will; they empty the bladder completely and have good control.

Acute Infectious Mononucleosis Simulating Acute Abdominal Emergency.—During the past six months aboard a heavy cruiser having an average complement of around 1,650 officers and men, Perisho and Sargent observed cases of acute infectious mononucleosis. In 4 of these, most or all of the signs and symptoms were confined to the abdomen and were of such character and severity as to simulate an acute surgical emergency. Two patients presented classic pictures of acute appendicitis, 1 of an acute diverticulitis (Meckel's) and 1 of a perforated peptic ulcer or ruptured spleen. The authors think that if the previous occurrence of typical cases of acute mononucleosis accompanied by sore throat and cervical adenitis had not made them "mononucleosis minded" these patients might have been subjected to unnecessary operation. It is probable that medical officers are too little aware of the fact that mononucleosis involving the mesenteric or retroperitoneal lymph nodes and spleen may simulate other abdominal diseases. The differential diagnosis depends principally on the differential leukocyte count.

Filariasis: Histopathologic Study.—Michael shows that histopathologic changes in the lymphangitis stage of filariasis may roughly be classified in two main divisions: (1) those presumably due to a generalized sensitivity caused by a distant worm focus with tissue changes occurring on an allergic basis and (2) those due to the presence of the worm in situ, resulting in local changes from absorption of worm products and, to a lesser degree, lymphatic obstruction. The author describes "fugitive swellings," skin tests with *Dirofilaria immitis* antigen, eosinophilic cell response and lesions in which worm segments, living worms, degenerated and calcified forms of microfilariae are found. The most important single diagnostic procedure, apart from the clinical history and physical examination, is the examination of a lymph node or lymphatic tissues for evidence of filariasis. All other laboratory procedures so far are inadequate, although skin testing with *Dirofilaria immitis* antigen is an aid. The problem, as judged from microscopic studies, is one of a foreign body engulfment and absorption of the parasite, resulting in the final production of scar tissue. Host resistance, augmented by action of the reticuloendothelial barrier, would seem to establish this lesion as being self limited in nature and ordinarily not productive of such sequelae as elephantiasis, lymph stasis and secondary infection. Not only will this infection not result in permanent damage to the vast majority of these patients but it will probably not become a public health problem in the future in the continental United States. The low percentage of microfilariae found in the peripheral blood and the absence of many of the optimal requirements for spread,

such as humidity and heavy rainfall, together with the low incidence of mosquitoes capable of serving as intermediate hosts, will serve to halt possible spread to the civilian population in the United States.

45:407-610 (Sept.) 1945

- Schistosomiasis in Naval Personnel: Report of 16 Cases. A. R. Hunt.—p. 407.
Modification of Faust-Meleney Technique: Feces Examination for Schistosoma Japonicum. J. K. McCorkle.—p. 420.
Observations on Tsutsugamushi Disease. W. M. Fischbach and D. E. Howell.—p. 423.
Sternal Puncture in Diagnosis of Malaria. B. M. Jacobson and H. K. Russell.—p. 429.
Eye Injuries and Diseases Encountered During Iwo Jima Campaign. K. B. Benkwith.—p. 433.
Anesthetic Agents in Treatment of Battle Casualties. H. B. Neel.—p. 442.
Pentothal Sodium in Orthopedic Surgery. H. C. Fett, F. A. Adams and Sarah E. Adams.—p. 449.
Treatment of Bedsores by Total Excision with Plastic Closure. J. C. White, H. W. Hudson Jr. and H. E. Kennard.—p. 454.
Appendicitis, with Emphasis on Use of Penicillin. G. Crile Jr., and J. R. Fulton.—p. 464.
Primary Healing Following Excision of a Cyst, Teratoma. C. N. Cooper.—p. 474.
Penicillin in Treatment of Vincent's Angina. H. E. Twining, H. W. Szyjko and R. A. Kern.—p. 479.
Measurement of Relative Exophthalmos by Roentgenography. B. Friedman.—p. 482.
Derangements of Knee Joint: Diagnostic Aid Obtained by Roentgenologic Examination of Soft Structures and of Menisci without Injection of Contrast Media. J. Gershon-Cohen.—p. 488.
Characteristics of Disciplinary Group in a Naval Hospital. J. P. Brady and H. M. Hildreth.—p. 500.
Neurologic Complications Following Dengue. A. Kaplan and A. Lindgren.—p. 506.
Central Macular Chorioretinitis in Naval Personnel. W. E. Borley, A. W. McAlester and R. A. Lower.—p. 511.
Report of Diphtheria-Epidemic. R. L. Dennis.—p. 517.
Treatment of Gonorrhea with Penicillin in Naval Dispensary. J. F. Ricciuti and W. B. Brett.—p. 520.
Treatment of Dermatologic Conditions Aboard a Destroyer. A. D. Dennison Jr.—p. 524.

Sternal Puncture in Malaria.—Jacobson and Russell studied marrow smears. These smears were dried in the incubator at 37 C. for thirty minutes, were stained with Wright's stain for one minute, then immersed in Giemsa stain for thirty minutes and differentiated in distilled water, with observation of the color at frequent intervals under the microscope. The smears were dried and examined under the oil immersion objective. Each preparation was examined at least twenty minutes before being pronounced negative. The authors performed sternal puncture on 90 patients. They divide these patients into four groups. In the 13 patients of group 1 several blood smears, some obtained after the administration of epinephrine, had been negative prior to the bone marrow examination. Ten of these 13 patients showed the presence of vivax parasites in the bone marrow, an 1 the presence of falciparum parasites. In 2 of the 13 cases of this group the bone marrow was recorded as negative. The 49 patients of group 2 exhibited atypical symptoms or signs. In all blood smears were negative, but 10 of these 49 patients showed vivax parasites in the bone marrow. In the 15 patients of group 3 who had the clinical symptoms of malaria, ring forms had been observed in thick blood smears but the diagnosis of the species remained in doubt. Bone marrow examination permitted the identification of the species in all but 1 of these 15 cases. Group 4 comprised 13 patients, each of whom had from one to fifteen attacks of malaria. At the time of examination none of these patients had paroxysms of malaria. In all of them thick blood smears were negative. In 4 of these 13 cases the bone marrow revealed the presence of Plasmodium vivax. The remaining bone marrow examinations yielded negative results. The authors stress that in properly selected cases the bone marrow examination increases the chances of an accurate diagnosis of malaria.

Excision with Plastic Closures in Bedsores.—White and his associates show that sacral bedsores can be resected and closed by primary suture. This method is applicable to indolent ulcers of the type commonly seen after severe injuries to the spinal cord. In these cases adequate preliminary treatment must be given to correct anemia, reduced serum protein with edema secondary to malnutrition, and avitaminosis. Systemic and local chemotherapy should be used to clear up sepsis in the tissues surrounding the decubitus, in the bladder or in any

other focus. If the area does not fill in with granulation tissue and a satisfactory growth of epithelium fails to cover the surface, excision of the entire lesion and plastic closure is preferable to pinpoint or Thiersch grafting. This can be carried out without fear of serious sepsis if penicillin is injected intramuscularly during the period of healing. Five case histories are reviewed. In 2 of these there was primary healing; in the other 3 there was some separation of the edges of the flaps. Two of the latter required secondary plastic procedures of lesser extent. Sepsis was no problem. In place of an adherent avascular scar with a thin covering of epithelium, which generally results from pin point or Thiersch grafting, these patients all obtained full thickness skin with a healthy layer of subcutaneous fatty tissue as a covering of the pressure area over the sacrum. However, even after a pressure sore has been excised and covered with full thickness skin and subcutaneous tissue, it can break down again under the unfavorable circumstances which may arise in patients with transverse lesions of the spinal cord. In the after-care of these patients the same precautions must therefore be observed as in any case of anesthesia of the weight bearing areas.

Virginia Medical Monthly, Richmond

72:317-362 (Aug.) 1945

- General Uses of Penicillin in Otolaryngology. F. D. Woodward.—p. 318.
Some Long Shot Cases of Cancer That Recovered. J. S. Horsley.—p. 321.
Partial Duodenopancreatectomy: Its Use in Treatment of Pancreatic Malignancy: Case Report. H. C. Lee.—p. 333.
Planned Parenthood. C. J. Andrews.—p. 341.
Indications for Terminating Pneumothorax Treatments. Elizabeth C. Cole.—p. 344.
Finding Early Tuberculosis. N. Mercer.—p. 348.

72:363-402 (Sept.) 1945

- Recent Advances in Drug Therapy. A. Smith.—p. 367.
Nonsurgical Therapy of Epilepsy. H. P. Newbill and R. Leigh Jr.—p. 373.
Dicumarol Therapy and Prothrombin Time. C. P. Segard.—p. 378.
Penicillin in Treatment of Pyogenic Infections of Skin: Report of 50 Cases. R. C. Manson.—p. 381.
Torsion of Omentum: Two Case Reports. J. G. Ramsay.—p. 388.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

53:255-300 (Aug.) 1945

- Cancer of Cervix Uteri: Some Fundamental Considerations. K. H. Martzloff.—p. 255.
Polyps of Cervix and Uterus. K. Newgard and D. G. Morton.—p. 268.
Use of an Ergovine-like Oxytocic (Methergine): Preliminary Report. J. C. Brougher.—p. 276.
Use of Local Anesthesia in Operations. H. E. Peters Jr.—p. 278.
Gastric Adenomas: Pathologic Study. J. H. Rieniets and A. C. Broders.—p. 282.

Polyps of Cervix and Uterus.—Newgard and Morton report 228 cases of polyps of the cervix studied at the University of California Hospital in the decade between 1930 and 1940. Simple excision and/or cauterization was done in 96 cases, simple excision plus radium treatment in 77, cervical resection in 36 and total or vaginal hysterectomy in 18; the remaining 1 was only observed. Although all of these patients were treated in the hospital, not all patients with cervical mucous polyps require hospitalization. The main feature is to rule out cancer. A simple asymptomatic cervical polyp may be removed in an office, and its base cauterized, if one makes certain that no serious associated pathologic condition exists. If bleeding or even spotting is complained of the polyp cannot be considered as the definite cause, and a more thorough investigation usually with hospitalization is advisable. An uncomplicated cervical mucous polyp rarely gives symptoms. While many endometrial polyps are asymptomatic, discharge and bleeding of a spotty, intermittent type are more frequent here. Both types of polyps have to be strictly separated from other polypoid masses of the cervix or uterine cavity. Their structures resemble those of the cervical and uterine mucosa respectively. Secondary changes are frequent, the most important being the nonmalignant epidermization in cervical polyps and cancer in endometrial polyps. The term polyp is being used too loosely, which probably explains many of the so-called malignant cervical polyps reported in the past. While polypoid carcinoma of the cervix occurs and, very rarely, a true polyp may become malignant, these changes are usually evident on clinical examination and thus rarely cause confusion.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

20:49-96 (June) 1945. Partial Index

- Assessment of Health in Childhood. N. B. Capon.—p. 52.
Effect of National Bread, of Iron Medicated Bread and of Iron Cooking Utensils on Hemoglobin Level of Children in Wartime Day Nurseries. Helen M. M. Mackay, R. H. Dolbys and K. Bingham.—p. 56.
Fraility of Red Cell to Hypotonic Saline in Infancy and Childhood. L. Findlay.—p. 64.
Toxic Thrombocytopenic Purpura Following Local Sulfathiazole Therapy. G. M. Donaldson and H. Scarborough.—p. 69.
*Diagnosis of Chronic Intussusception in Children, with Account of 3 Cases. J. M. Garvie and F. H. Kemp.—p. 73.
Cardiac Complications in Scarlet Fever. C. Neubauer.—p. 81.

Chronic Intussusception in Children.—Garvie and Kemp report 3 cases, in 2 of which the condition was not suspected for a long time owing to the apparent absence of a palpable abdominal tumor, while in the third case the diagnosis was not made because the tumor did not persist. In the first case the intussusception first occurred at 2½ years of age. Spontaneous reduction must have ensued, for there were no symptoms for about two years. Three years ago the patient, a boy now 7 years of age, had an illness which was in the nature of a toxic reaction of the Henoch-Schönlein type, and there can be little doubt that the intussusception existed at that time, for thereafter he had attacks of pain about once a month. Despite the long standing illness, the boy's condition remained good and there was no wasting. The true diagnosis was never suspected because no abdominal tumor was palpated even during the paroxysms of pain. The x-ray examination gave conclusive evidence of intussusception. The common features in the histories of the 3 cases were repeated attacks characterized by the sudden onset of central abdominal pain. Any child who gives a suggestive history should be carefully examined, for owing to the difficulty in securing proper relaxation the tumor can be easily missed. X-ray studies should be made whether a tumor is palpable or not.

Australian J. Exper. Biol. and M. Science, Adelaide

23:81-164 (June) 1945. Partial Index

- Corrosion of Concrete: 1. Isolation of Species of Bacterium Associated with Corrosion of Concrete Exposed to Atmospheres Containing Hydrogen Sulfide. C. D. Parker.—p. 81.
Presence of Large Amounts of Uric Acid in Integument of Mammals. A. Bolliger and Margaret H. Hardy.—p. 99.
Diluted Blood Perfusion of Pneumonic Lung. E. R. Trethewie.—p. 103.
Spontaneous Infection of Laboratory Mice with Psittacosis-like Organism. P. DeBurgh and A. V. Jackson and S. E. Williams.—p. 107.
Relation Between Urinary Volume and Urinary Excretion of Thiamine and Riboflavin of a Man Fed on a Constant Diet. Catherine E. Francis and E. C. Slater.—p. 119.
Efficiency of Human Prothrombin System. P. Fantl.—p. 123.
Staphylococcal Fibrinolysin. R. Christie, J. J. Graydon and E. F. Woods.—p. 127.
Thiol-Vitamin K Mechanism in Clotting of Fibrinogen. R. N. Lyons.—p. 131.
Significance of Primary Isolation of Influenza Virus by Inoculation of Mice or of Allantoic Cavity of Chick Embryos. F. M. Burnet and J. D. Stone.—p. 147.
*Method for Isolation of Influenza Virus from Throat Washings Without Filtrations. F. M. Burnet and J. D. Stone.—p. 161.

Isolation of Influenza Virus.—Burnet and Stone demonstrate that by the use of penicillin and sodium sulfadiazine it is possible to isolate influenza virus in the O form from unfiltered human throat washings in which it is present. The same method has allowed the successful isolation of virus from the nasal secretion of experimentally infected ferrets.

British Journal of Urology, London

17:45-84 (June) 1945

- Observations on Renal Pain. J. T. Che-termann.—p. 45.
Blind Ending Duplication of Ureter. H. G. Hanley.—p. 50.
Urinary Fistula Following Scrotal Vasectomy. H. G. Hanley.—p. 54.
Malignant Disease of Urinary Bladder at Age of 27. A. L. Bell.—p. 55.
Solitary Benign Papilloma of Ureter. J. D. Ferguson.—p. 59.
Primary Carcinoma of an Ectopic Bladder and Primary Benign Papilloma of Ureter. W. Etherington-Wilson.—p. 62.
Composition of Calculi from 103 Cases of Urinary Lithiasis in Dogs. E. G. White.—p. 64.
Case of Vesicourethral Calculus. A. Miller.—p. 65.
Benign Tumors of Epididymis and Tunica Vaginalis: Report of 2 Cases. J. N. Robinson.—p. 68.

British Medical Journal, London

2:145-172 (Aug. 4) 1945

- Problems of Naval Warfare Under Climatic Extremes. M. Critchley. -p. 145.
- Bactericidal Effect of Mixtures of Ethyl Alcohol and Water, with Special Reference to Sterilization of Skin, and Note on Comparable Effects of Ether. G. T. L. Archer. -p. 148.
- Estimation of Serum Proteins. H. Hoch and J. Marrack. p. 151.
- Four Cases of Typhus Fever in Great Britain. H. L. W. Beach and J. K. Remble. -p. 153.
- Some Finger Tips in Industry: Protection by Hydrogen Peroxide. J. V. Bates. -p. 154.
- Therapeutic Trial of Choline Chloride in Infective Hepatitis. J. S. Richardson and W. S. Suttren. p. 156.

Ethyl Alcohol and Water for Sterilization of Skin.--

The measured volumes of alcohol and water were slightly stronger than their nominal strength expressed as percentages by volume. Archer found that for short exposure and on a dry surface the effective range of strengths of alcohol for the killing of nonsporing bacteria is between 90 and 50 per cent. Ninety-five per cent and above are partially ineffective, 100 per cent being especially so. The lower surface tension of stronger alcoholic mixtures suggests that the upper limits of this effective range may be preferable to the lower, though against this must be considered the more pronounced fixing effect of strong alcohol, which may cause the coagulation of an exudate and the consequent protection of living organisms within the coagulum so formed. Since the normal skin is more or less moist, the effective range of alcohol for use on it is somewhat different. The 100 per cent strength is commonly effective--at least on moister skins and under tropical conditions of temperature and humidity. The washing of the skin before the application of alcohol might exert a similar effect unless subsequent drying is thorough. The value of a low surface tension may well be of importance in increasing spread and penetration for skin sterilization. It is therefore considered that, as a general recommendation under all climatic conditions, 80 per cent of alcohol by volume is probably most suitable for skin sterilization, though this will not be more effective than any other nonpersistent agent for dealing with deep lying resident flora. Ether is quite ineffective as a sterilizing agent for the skin, since its effect is very slight on staphylococci and streptococci when applied to a surface--though it is effective against certain bacillary forms, both gram positive and gram negative.

2:173-204 (Aug. 11) 1945

- Problems of Naval Warfare Under Climatic Extremes. M. Critchley. -p. 173.
- Criticism of the Bassini Operation and Its Modifications. G. B. Mann. -p. 178.
- Bassini's Operation for Inguinal Hernia. T. L. Gordon. -p. 181.
- Relation Between Gastric Acidity and Anterior Pituitary-like Hormone Content of Urine in Pregnant Women. S. Way. -p. 182.
- Diarrhea Due to Giardia Lamblia. J. F. Fraser and R. Taylor. -p. 184.

Gastric Acidity and Urinary Hormone Content During Pregnancy.--

Way observed in hyperemesis gravidarum a high incidence of diminution of gastric acidity in patients with hydatidiform mole. Since hydatidiform mole is associated with the presence in the urine of large amounts of anterior pituitary-like gonadotropic substance, it appeared that this factor might be responsible for the low secretion of acid in the gastric juice. Investigations were made on 63 patients who gave no history of gastric disorders. Twenty-two were between the thirty-fifth and fortieth weeks of pregnancy, 20 between the twentieth and twenty-ninth weeks and 21 between the eighth and sixteenth weeks. In addition 4 other patients were studied. One of these had a missed abortion and 1 a dead fetus at full term; 1 had a hydatidiform mole and one a chorionepithelioma. Evidence was obtained to show that in human pregnancy there appears to be some relation between the free and total acid in the gastric juice and the amounts of anterior pituitary-like gonadotropic substance secreted in the urine, and that it seems to be inversely proportional.

Edinburgh Medical Journal

52:241-288 (July-Aug.) 1945

- Transition from Vag Surgery to Cleft Surgery. W. Anderson. p. 241.
- Employment and Health. T. Ferguson. p. 252.
- Basic Sciences in Surgery. J. Z. Young. p. 262.
- Diagnosis and Description of Cancer. W. F. Harvey. p. 277.

Lancet, London

2:97-128 (July 28) 1945

- Acridine Sulfonamide Compounds as Wound Antiseptics: Clinical Trials of Flavazole. J. McIntosh, R. H. M. Robinson, F. R. Selbie, J. P. Reilly and H. E. Blake. -p. 97.
- Assessment of Male Fertility by Semen Analysis: Attempt to Standardize Methods. Clare Harvey and Margaret Hadley. -p. 99.
- Combined Action of Penicillin and Bacteriophage on Staphylococci. F. Himmelweit. -p. 101.
- Syringe Transmitted Hepatitis. E. M. Darnady and C. Hardwick. -p. 106.
- Prolonged Administration of Quinacrine: Its Effect on Health. W. R. M. Drew and J. Rehl. -p. 107.
- Periarteritis Nodosa in Thionine Therapy. P. C. Gibson and J. T. Quinlan. -p. 108.

Action of Penicillin and Bacteriophage on Staphylococci.--

The organism used in the experiments was staphylococcus S3K. The bacteriophage was staphylococcus phage K producing a maximum titer of 10^{10} with staphylococcus S3K. Its activity was measured by determining the last effective tenfold serial dilution. The penicillin was the TRC 22 preparation of the sodium salt with a potency of 187 units per milligram. Degrees of lysis were assessed by comparison of turbidity with standards made from suspensions of formalized (1 per cent) staphylococcus cultures. Viable counts were made by the poured plate method. Himmelweit found that penicillin does not affect multiplication of staphylococcus phage K, acting on staphylococcus S3K, nor does it interfere with the lethal and lytic action of this phage. Staphylococcus phage K and penicillin together produce more rapid killing and lysis of staphylococcus S3K than either alone. Together they also effect rapid and complete sterilization, indicating that penicillin resistant organisms are killed by or through the agency of phage and vice versa. Lysis by bacteriophage as an "indicator" is capable of detecting concentrations of penicillin of 0.001 unit per cubic centimeter or less.

Prolonged Administration of Quinacrine.--

Drew and Reid investigated 102 soldiers returning home from West Africa. Quinacrine had been ordered for all men as a malarial suppressive for the last four to eighteen months of their tour of duty. Malignant tertian (Plasmodium falciparum) malaria was the most important disease encountered. There were no cerebral or other grave forms of the disease, no complications like chronic splenomegaly and severe anemia. This favorable state of affairs is probably largely due to the antimalarial action of quinacrine. Nine men had slight hepatic and splenic enlargement, and 3 others had palpable spleens, but these conditions were symptomless. The hippuric acid synthesis test indicated temporary impairment in liver function in 9 men, 3 of whom had slight hepatic enlargement; but this was of doubtful significance since other liver function tests were all normal. Liver puncture biopsy of slightly enlarged livers showed that these had no deviation from the normal structure. There is no evidence that quinacrine in suppressive doses causes liver damage or other ill effects, but there is good reason to believe that the drug has prevented deaths from severe forms of malaria and from complications such as blackwater fever, and that its use can eliminate disability from chronic malaria.

Medical Journal of Australia, Sydney

2:1-32 (July 7) 1945

- Entewell to "Forty-Four." H. Sutton. -p. 1.
- Disease of Gallbladder. M. Wollock. -p. 7.
- Acute Disseminated Lupus Erythematosus, with Report of Fatal Case. G. B. Baldwin. -p. 11.

2:33-64 (July 14) 1945

- Etiology of Hemolytic Disease of Newborn. R. J. Walsh. p. 33.
- Incidence of Extrapulmonary Tuberculous Infection in Fatal Pulmonary Tuberculosis. R. A. Willis and D. B. Rosenthal. -p. 39.
- Corynebacterium Diphtheriae Resistance to Drying: Acquired Resistance and Its Stability. S. G. Koss. -p. 42.
- Observations on Sensitivity of Staphylococci to Penicillin. F. A. North and R. Christie. -p. 44.
- Administration of Penicillin by Continued Implantation of Needle. Z. Freeman. -p. 46.

Etiology of Hemolytic Disease of the Newborn.--

Walsh studied the relationship of blood group factors, especially the Rh factor, to the etiology of hemolytic disease of the newborn in 107 instances of the disease. The mother had Rh

negative blood and the child Rh positive blood in 92 per cent of the families investigated. An Rh agglutinin was found in the serum of 48 per cent of the mothers examined. The severity of the disease in the child was not related to the presence of the Rh agglutinin in the mother. The frequency and the severity of the disease generally increased with an increasing number of pregnancies, although some exceptions were noted. It is possible that extracorporeal Rh substance in the fetus may absorb some Rh agglutinin before it reaches the Rh positive erythrocytes. It was assumed that in 83 mothers with Rh negative blood the Rh factor was responsible for the hemolytic disease in the child, but there still remain the children with hemolytic disease who are born of mothers with Rh positive blood. The disease in seven such families investigated might be explained either by an ABO group incompatibility between the mother and the child or by the presence of an unknown agglutinin in the mother's serum. In five of the seven families there was an ABO group incompatibility, but in two families the mother and child belonged to the same ABO grouping. It may be pure coincidence that in the 2 latter cases the father had Rh negative blood. Unfortunately the possibility of the presence in the father's cells of an Hr or other agglutinogen could not be investigated. The relationship of the Rh factor to the etiology of repeated miscarriages, multiple stillbirths and physiologic jaundice was investigated in a number of instances. The Rh factor was not the etiologic agent in the majority.

Sensitivity of Staphylococci to Penicillin.—North and Christie studied 128 strains of staphylococci of known biologic and metabolic characteristics, collected from various sources before the advent of penicillin treatment; all were tested for penicillin resistance. Thirty-one strains from hospital wards in which penicillin has been used extensively, particularly in local application to wounds, were also tested for resistance to penicillin. Their biologic and metabolic characteristics were compared with those of the 128 strains mentioned. Of the 128 strains from "nonpenicillin" sources, 123 were inhibited by one-eighth unit or less of penicillin per cubic centimeter, 2 were inhibited by one-fourth unit and 3 were inhibited by half a unit. The 5 strains showing slightly increased resistance were non-pathogenic. Of the 31 strains from patients in penicillin treatment wards 18 showed considerable resistance to the drug. All were pathogenic. The detection of such a large proportion of penicillin resistant strains in cultures received from penicillin treated lesions was unexpected. These strains showed no differences in common properties from normal strains. It is not known whether these resistant strains develop mainly from sensitive parent organisms in the same wound or are the result of cross infection either from carriers or air borne. From this preliminary study it has not been possible to determine to what extent these resistant strains have delayed the sterilization and healing of wounds.

Presse Médicale, Paris

53:229-240 (May 5) 1945

- *Late Activation After Negative Tuberculin Tests. A. Courcoux, J. Gényvriér, M. Duret and A. C. Maclouf.—p. 229.
Angina Pectoris from Coronaritis in Young Persons. A. Jouve and R. Oddo.—p. 230.
Stricture of Ureter After Radium Therapy of Cancer of Cervix. L. Leger.—p. 231.

Late Activation After Negative Tuberculin Tests.—Courcoux and his associates believe that the late activation of tuberculin tests coincides most often with the acquisition of cutaneous sensitivity to tuberculin. This phenomenon is observed principally in subjects tested previously by the intradermal route. Late activation of old Mantoux tests is more frequent than that of old Pirquet tests. In one of their observations the authors were able to observe clearly the activation of tests performed more than twenty-four months before. This is the first observation in which so much time had elapsed between intradermal injection of tuberculin and its subsequent manifestation. In most of their observations the delayed activation caused very persistent reactions (several months). It is possible that the persistence of the induration may be linked to the amount of tuberculin that has been used. A mild and fleeting reaction may be elicited by a small dose, whereas a large dose may elicit a more intense and lasting reaction. In female

patients who have been tested many times, late activations may raise an esthetic problem. Young girls complained of the persistence of disagreeable indurations in the deltoid region, and nurses have asked that the tests be made on the thigh. Contrary to peremptory affirmations of certain observers, the authors do not think that retarded activation is the first sign of a severe primary infection.

Acta Medica Orientalia, Jerusalem

4:207-242 (July) 1945

- Refrigeration Anesthesia in Poor Risk Amputations. F. Mandl.—p. 207.
*Significance of Hypocorticoadrenalism for Diagnosis and Therapy of Certain Disorders of Joint and Muscles. E. Lyon.—p. 219.
Fibrin Body: Report of Case with Unusual Feature. S. Schorr.—p. 224.
Treatment of Deafness with Benzylcinamate. Seelenfreund.—p. 228.

Hypocorticoadrenalism in Disorders of Joints and Muscles.—Lyon presents the case of a woman aged 56 in whom an existing hyperthyroidism had grown worse after the menopause. She also exhibited symptoms referable to insufficiency of the adrenal cortex: adynamia, gastrointestinal symptoms, arthropathy and muscular pain. She was given intramuscular injections of a concentrated extract of adrenal cortex, at first every day and later every second day. Soon after the institution of this treatment, pain and stiffness of the left shoulder joint subsided and other joint pain disappeared completely. Appetite improved, weight increased, and nausea, diarrhea and mental depression disappeared. Some of the symptoms reappeared when the injection of the cortical extract was discontinued, but they subsided again following the oral administration of a cortical extract. The author cites further evidence of the involvement of hypocorticoadrenalism in the pathogenesis of spondylarthritis-ankylopoietica. He suggests that the prolonged inflammatory infectious process in ankylosing spondylarthritis suggests a toxic depression of the adrenal cortex function as it is observed in diphtheria, scarlet fever and influenza. He also cites a case which indicates that hypocorticoadrenalism plays a part in the pathogenesis of dermatomyositis. Adrenal cortex extract therapy should be considered in the aforementioned conditions.

Acta Chirurgica Scandinavica, Stockholm

90:495-588 (Feb. 10) 1945

- Atypical Trigeminal Neuralgia Localized to Ophthalmic Division and Its Surgical Treatment. L. Preher.—p. 495.
Stellectomy by Lateral Scalenovertebral Approach. C. van Gelderen.—p. 519.
Experiments on Oxygen Therapy in Experimental Meteorism. A. Ringsted and K. Andersen.—p. 529.
*Primary Thrombosis of Axillary Vein: 7 Verified Cases of Thrombus Formation. E. Roelsen.—p. 547.
Femoral Fractures in Children: Some Views on Their Prognosis and Treatment. E. Hedberg.—p. 568.

Primary Thrombosis of Axillary Vein.—The disorder described by Roelsen is characterized by swelling of an upper extremity from the hand to the shoulder. The swelling does not pit like edema. The subcutaneous veins of the arm and the pectoral region are dilated and congested, and the hand and arm are somewhat cyanotic. There is a sensation of heaviness or slight pain in the arm, sometimes with reduction in muscular power. The history sometimes reveals excessive exertion with the involved arm. General symptoms, especially signs of infection, are absent. This condition, which is a manifestation of a more or less acute venous stasis, has been described under various terms, such as traumatic thrombosis of the axillary vein, exertion thrombosis or thrombophlebitis of the axillary (subclavian) vein and effort thrombosis. Recent investigations have revealed that the condition may develop in the absence of thrombosis. This has been confirmed by Roelsen in 3 of 7 cases under his observation. It is possible that in these cases thrombosis had existed previously (Veal's "post-thrombotic syndrome"). Surgical treatment in the form of venous resection is advisable only in protracted cases of stasis with repeated relapses. Venography may aggravate the stasis and edema and for this reason is inadvisable, particularly in the acute stage. Treatment with heparin was helpful in some cases. Immobilization is not advisable in thrombosis of the arm.

Book Notices

Acute Injuries of the Head Their Diagnosis Treatment, Complications and Sequels By G. I. Rowbotham B.Sc. J.R.C.S. Surgeon in Charge Department of Neurological Surgery Newcastle General Hospital, Newcastle, England. With a foreword by Norman M. Dott M.B. Ch.B. F.R.C.S. Neurological Surgeon Royal Infirmary, Edinburgh Scotland. Second edition. Cloth. Price \$4.50. Pp. 421 with 201 illustrations. Baltimore: William Wood & Company, 1947.

This splendid presentation of the subject of injuries to the head has been prepared for the information of the general practitioner and the medical student rather than the specialist. That it has served a useful purpose is evidenced by the fact that a second edition has been called for within three years after the appearance of the first. The material is presented clearly and in detail from the personal experience and point of view of the author. There is, however, little with which anyone could disagree. The illustrations are for the most part excellent and serve their purpose well. A few, notably figures 33, 78 and 162, should be replaced by clearer photographs. Figure 62 erroneously gives the impression that a localized lesion in the superior temporal convolution would give rise to deafness and figure 63 that there are motor fibers in the anterior limb of the internal capsule. These, however, are all trivial matters which do not detract from the inherent value of the book. The practice of placing the references at the bottom of the page is a mistake. It is rare that the reader is in need of the full reference at the time he is reading the text, whereas having the references scattered throughout the book make them very difficult to find. The last chapters, on rehabilitation post-traumatic epilepsy and the final results of head injuries, will be found of interest to many readers. The other chapters dealing with the mechanism pathology, symptomatology and treatment of craniocerebral injuries will reward their reading by all who deal with these common injuries.

Hygiène contre venus Guerre à la syphilis! Par Adrien Plouffe docteur en médecine et en hygiène publique directeur adjoint du Service de santé de Montréal. Texte préface d'une mère de famille. Paper. Price \$1.25. Pp. 221. Montréal: Les Éditions Lumen, 1947.

This book by a French Canadian physician is a popular presentation of arguments and justification for instruction of young people with regard to the venereal diseases. It quotes religious authorities to substantiate the assertion that the maintenance of good health is a moral obligation. The author has evidently had in mind the need to make information available to comparatively simple and unsophisticated readers. Some of the principal facts with regard to syphilis and gonorrhea are given, and much attention is paid to the effects of syphilis in families and on children. The author strongly and repeatedly advocates premarital examinations. The book will probably be of considerable service to the type of reader whom the author had in mind.

Practical Anatomy of the Rabbit An Elementary Laboratory Text-Book in Mammalian Anatomy By the late B. A. Bensley Ph.D. Seventh edition. Revised and edited by J. Horne Criddle Ph.D. Associate Professor of Comparative Anatomy and Neurology in the University of Toronto Toronto. Paperback. Price \$.70. Pp. 78 with 111 illustrations. Philadelphia: Blakiston Company, 1947.

The recurring editions (two since the death of the author) demonstrate the superior value and service of this book in the elementary teaching and study of mammalian anatomy. The present edition has a new section on the sense organs and an enlarged section on the structure of the liver. The illustrations, as to both gross and microscopic anatomy, are excellent.

Your Eyes Have Told Me By Louis H. Schwartz M.D. Cloth. Price \$2.75. Pp. 208 with illustrations. New York: J. P. Dutton & Company, Inc., 1947.

The author presents his material for the layman and makes a rather dramatic effort to explain the various diseases and anomalies of the visual organ and its adnexa in simple language and by example. At times the language isn't quite simple

enough. In the preface he defines what he calls the four O's: optician, optometrist, oculist and ophthalmologist. The chapter subjects are interesting. The first, "Your Eyes Have Told Me," covers the relation of the eyes to general disease; "The Sins of the Fathers" is on what he calls hereditary Syphilis; "The Strange Case of Lady Nicotine and John Barclayson" is about toxic amblyopia; "The Siamese Twins" deals with sympathetic ophthalmia; "The Lady With the Hard Eyes" is about glaucoma; "The Popeye Clinic" describes proptosis and "Monarch of All I Survey" presents the subject of visual fields. "Thru the Looking Glass" and "Fundus Land" deal with the ophthalmoscope and fundus disease. On page 83 he states that contact glasses are placed against the cornea and held in place by the eyelids. The glass does not make contact with the cornea. It is held against the sclera by capillary attraction. On page 86 he states that "sympathetic ophthalmia" is more apt to follow a punctured wound in the cornea. A corneal wound alone never causes this disease. It follows injury to the uvea, regardless of whether the cornea or the sclera is the site of perforation. There are seven colored plates illustrating two normal and twelve pathologic conditions.

Enfermedades del corazón Cirugía y embarazo Por el profesor Dr. Ignacio Chavez director del Instituto nacional de cardiología México D. F. Paper. Pp. 182 with 7 illustrations. Mexico: D. F. Edición de la Colección nacional, 1947.

This book dealing with the problems of pregnancy and surgery in the cardiac patient, is based on a series of lectures delivered by the author in the Colegio nacional in Mexico City. The book is divided into six chapters. The first four chapters deal respectively with the hemodynamics of normal pregnancy, the clinical alterations observed in pregnancy, the clinical findings in pregnant women with heart disease and the considerations determining conception and the termination of pregnancy in the cardiac patient and the management of the cardiac woman who is pregnant. The last two chapters deal with the surgical risks involved in operating on the cardiac patient. The author has assembled from his large experience and a critical survey of the literature, including that in the English language, a masterful presentation of the entire subject. It is a meritorious addition to current literature and clarifies the risks of pregnancy and surgery in the cardiac patient. It has succeeded in its aim of assembling the subject matter for use by the general practitioner. The specialist also will find its personal worth. It is while.

Refraction of the Eye By Alfred Cown M.D. Professor of Ophthalmology Graduate School of Medicine University of Pennsylvania Philadelphia. Second edition. Cloth. Price \$4.75. Pp. 278 with 184 illustrations. Philadelphia: Lea & Febiger, 1947.

This edition has been thoroughly revised and brought completely up to date in all scientific and technical aspects of the subject. The author employs the theory of ophthalmic optics in such a way that clinical aspects merge logically and in orderly sequence from their bases of scientific facts. In those portions of the text which deal with the theory of optics the method of detailed experiment, example and frequent repetition has been carried out. The reader is invited to make diagrams illustrating the theories involved by following the contents of the text. This is a material aid in learning such a difficult subject as physiologic optics, a subject which at its best presents a stumbling block both to beginners and to those advanced in ophthalmology. The first five chapters are devoted to an elucidation of refraction and reflection at plane and spherical surfaces. Five paragraphs are devoted to lenses. Eight chapters contain the basic elements necessary in obtaining a refraction of the eye. The section on refraction proper is well organized and complete and gives a brief outline of all the tests in vogue to date. The final chapter contains a complete description of contact glasses. The author is not overly enthusiastic concerning their use. The illustrations are exceptionally well planned and can be easily followed. This book should be a necessary addition to any ophthalmologist's library as it contains the basic fundamentals so necessary for a thorough understanding of the subject of refraction.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

CLIMATE FOLLOWING RHEUMATIC FEVER

To the Editor:—A man aged 23 had in 1930, at the age of 8, an attack of rheumatic fever with a mitral regurgitation murmur but no joint involvement. This cleared up during the summer of 1931. In the winter of 1932 he had another attack, and this time both the mitral and aortic valves were involved. The mitral regurgitation cleared up shortly thereafter, but he still has a well compensated aortic regurgitation murmur. From the fall of 1932 to the present he has spent the winters in southern Arizona without trouble of any kind. He now plans to live in the vicinity of Cincinnati. What are the chances of a recurrence of rheumatic fever while living in a climate as typified by that of Cincinnati or of New York? What prophylactic medication and dosages are recommended to prevent further rheumatic attacks?

M.D., New York.

ANSWER:—While Ohio and New York both are areas with moderately high incidence rates for acute rheumatic fever, a patient of 23 has passed the age period of greatest susceptibility to this disease. The predisposition to further attacks of acute rheumatic fever which is observed following an initial attack gradually disappears, and in a patient like this, after an interval of fifteen years, this factor is probably not important. A mass of evidence has been developed to indicate that the prophylactic use of sulfadiazine in amounts of 1 Gm. daily will largely prevent the development of streptococcal disease due to sulfadiazine sensitive strains and, presumably for this reason, episodes of acute rheumatic fever. Sulfadiazine resistant strains of hemolytic streptococci are, however, appearing with increasing frequency and cannot be controlled by this procedure. While reactions to sulfadiazine in daily doses of 1 Gm., even when used for long periods, are infrequent, fatal complications occasionally do occur in the form of agranulocytosis or exfoliative dermatitis. The greatest incidence of streptococcal disease in Ohio and New York is ordinarily in the period of October 1 to June 1, and sulfadiazine prophylaxis, if used in these states, may be restricted to this portion of the year. However, it is doubtful that the probability of further episodes of acute rheumatic fever in the case under discussion is sufficient to warrant the use of this preventive procedure. Bacterial endocarditis perhaps constitutes a greater hazard than rheumatic fever for such a patient. Ideally it would be desirable to make a permanent home in an area of low incidence of streptococcal disease.

CEREBRAL SPASTIC PARALYSIS

To the Editor:—What is the value of curare in the treatment of a case of what seems to be spastic cerebral palsy in a girl of 5 years, delivered by forceps? She seems to be fairly bright mentally but is unable to walk. Athetosis and incoordination are pronounced. She is able to talk and has good health otherwise.

M.D., Nebraska.

ANSWER:—Curare has been used experimentally in cases of spastic cerebral paralysis but has not been used routinely because its use is not without danger. Curare, if given intelligently, can reduce or decrease muscle spasticity especially if followed by physical therapy, muscle education, hydrotherapy and occupational therapy. Unless a patient with spastic cerebral palsy can receive these helpful aids it is better not to use curare. If deformities are present a competent orthopedic surgeon should perform a tenotomy and any other procedures that are necessary. This should be followed by massage, hot water baths and galvanic stimulation. It is frequently surprising to see how well these patients do if they have normal intelligence.

SEBACEOUS CYST IN INFANT

To the Editor:—An 8 months old baby has a sebaceous cyst just below the bridge of the nose about the size of a small bean. It is increasing slowly in size and is disfiguring. It seems to be filled with sebaceous material. Would it be dangerous to incise and curet a cyst in this particular position?

M.D., Ontario.

ANSWER:—If the lesion is not infected, there is no reason why a sebaceous cyst like this should not be excised. It would probably be well to wait until the baby is a little older.

VITAMIN B COMPLEX IN DIABETES MELLITUS

To the Editor:—What is the opinion of competent authorities as to the efficacy of the supplemental treatment of diabetes mellitus with vitamin B complex? I would appreciate references to the medical literature pertaining to its use in this disease.

Major, M. C., A. U. S.

ANSWER:—The question, probably inspired by the report of Biskind and Schreier to the New York Academy of Medicine, that vitamin B complex used in treating diabetes would reduce or eliminate the use of insulin, involves two problems: (1) the possible effect of vitamin B complex in the treatment of uncomplicated diabetes mellitus; (2) the use of vitamin B complex for diabetic patients in the presence of complications which may require supplemental treatment with vitamins.

It is generally believed that in uncontrolled diabetes with glycosuria, polyuria and hyperglycemia the body may lack needed nutrients such as vitamins partly through loss by excretion and partly because the metabolic disturbance prevents their normal utilization. Therefore, while the diabetes is being brought under control by means of insulin and a diabetic diet, vitamin B complex may well be given, especially when diabetic coma has been present. Thiamine, riboflavin and nicotinic acid are considered to have a necessary place in the intermediary steps in carbohydrate metabolism (Soskin, in Wohl's Dietotherapy, 1945, p. 57).

Experiments such as those of Styron and his co-workers have been carried out in which diabetic rats and nondiabetic rats were studied during experimental thiamine deprivation and during the recovery when treatment with thiamine was given. No difference was observed in the length of time required by diabetic and nondiabetic rats to develop signs of deficiency. During the period of deprivation the glycosuria of the diabetic rats diminished, presumably because of the lowered food intake. Urinary sugar tended to reappear at the final stage of the deficiency during the time of polycytemia. The carbohydrate tolerance tests showed little change until signs of pronounced deficiency appeared. Thus, lowered tolerance occurred when, by reason of the neuritis, muscular activity and power were lost. Actually when thiamine intake was greatly increased, carbohydrate tolerance seemed to improve. Vorhaus, Labbé and Mosonyi and their co-workers have reported improvement. Martin has described intensification of diabetes in depancreatized dogs on a vitamin B free diet, with great improvement in carbohydrate tolerance when thiamine and riboflavin were given. Other workers, notably Lepovsky, Wood and Evans and McIntyre and Burke, have recorded but little change in glucose tolerance either with deficiency or with excess of vitamin B. An extensive literature on thiamine is given by Williams and Spies. Wilder states that "at present the evidence of value in diabetes from therapeutic doses of the vitamin B complex, or any of its constituents, is conflicting but suggestive. The diabetic organism probably requires more vitamin B than easily is obtained in a mixed diet. When diets high in white flour are prescribed the danger of deficiency is increased, and with such diets it probably is wise to supplement the intake of the entire vitamin B complex by giving brewers' yeast. It has not been shown that doses of thiamine or riboflavin in excess of the amounts of these obtainable in well planned diets are therapeutically effective, except in cases in which the intake of these substances previously has been deficient." Certainly the therapeutic effect of giving vitamin B complex is not comparable in degree with that of a carefully balanced diet and insulin.

In cases of diabetes in which febrile complications, infections, pregnancy, lactation or achlorhydria have increased the need for or impaired the utilization of vitamins or when a definite neuropathy is present, vitamin B complex is generally useful. When a complicating vitamin deficiency exists, its relief may also be accompanied by improvement of the diabetes.

References:

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Williams, R. R., and Spies, T. D.: *Vitamin B (Thiamine) and Its Use in Medicine*, New York, Macmillan, 1938.
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BLOOD GROUP SPECIFIC SUBSTANCES—"UNIVERSAL
DONOR" BLOOD

To the Editor:—What is the present status of the Witelsky substances A and B for converting all blood types into "universal donor" blood? Is it practical to use this material for banked blood in hospital blood banks? Is this material commercially available?

Walter J. Siebert, M.D., St. Louis.

ANSWER.—The use of solutions of the group substances A and B for conditioning group O blood to render it safe for use for patients of all blood groups is still in the experimental stage. In settling such a problem two points must be established: (1) the safety of the preparation and freedom from unpleasant reactions and (2) the efficacy of the preparation. Klendshoj and Witelsky (Transfusion of O Blood, Conditioned by the Addition of Blood Group Specific Substances, *THE JOURNAL*, Aug. 11, 1945, p. 1091) have established the first point beyond a reasonable doubt. Some of the earlier preparations of group substances had caused occasional unpleasant flushing of the skin, presumably because of the presence of residual animal proteins, but this difficulty seems to have been overcome in the more recent preparations. The second point is difficult to solve because dangerous reactions are extremely rare even when group O individuals are used as universal donors without any special precautions. In a series of 819 transfusions, Rosenthal and Vogel (Observations on Blood Transfusions from Universal Donors, in Mudd and Thalheimer's "Blood Substitutes and Blood Transfusion," Springfield, Ill., Charles C Thomas, 1942) encountered only a single hemolytic reaction that could be attributed to a high titer of isoagglutinins in the donor's serum, and this patient recovered from the reaction. Only a single completely proved case of a fatal hemolytic reaction due to the use of universal donor blood has been reported (Wiener, A. S., and Moloney, W. C.: Hemolytic Transfusion Reactions; Differential Diagnosis; "Dangerous Universal Donor" or Intragroup Incompatibility, *Am. J. Clin. Path.* 13:74 [Feb.] 1943); all the earlier reports must be discounted because they failed to take into account the possibility of reactions due to intragroup incompatibility with regard to the Rh factor. There has also been one report of a fatality from the use of unpooled plasma (Albertson, E. C.: Fatality Due to the Transfusion of Unpooled Plasma, *Am. J. Clin. Path.* 15:128 [April] 1945). The titers of the isoagglutinins in these 2 cases were so extremely high that probably they were not natural isoagglutinins but immune isoagglutinins. (The injection of pooled human plasma or therapeutic horse serum, both of which contain A and B group substances in solution, may stimulate the production of high titered immune anti-A and anti-B isoagglutinins.) If group O donors with a history of having received a plasma transfusion or a therapeutic serum injection are rejected as universal donors, this would remove a major source of danger from the use of universal donors (Wiener, A. S.; Soble, R., and Polivka, H.: Simple Method of Preparing Potent Blood Grouping Sera, *Proc. Soc. Exper. Biol. & Med.* 58:310 [April] 1945). With regard to the efficacy of the group substances in preventing dangerous reactions from the indiscriminate use of group O individuals as universal donors, there is no direct evidence supporting this claim. The claim is based entirely on the ability of the group substances to cause in vitro a definite reduction in titer of the isoagglutinins in normal group O plasma. Tests have not been made to determine whether a similar reduction in titer would occur with plasma containing high titered immune anti-A and anti-B isoagglutinins, such as are produced after plasma transfusions or injections of horse serum. The only way to settle this problem is take such a dangerous sample of group O plasma and divide it into two portions; inject half into a group A (or group B) patient unmodified; the remainder should be injected into a second patient of group A (or group B) after the addition of group substances.

The group substances are not yet commercially available. Group substances may be obtained for experimental use, however, from the Eli Lilly Company. In the meantime, the best procedure would be to weed out donors with dangerously high titers of isoagglutinins by testing a fixed dilution of their plasma, e. g. 1:50, with standard A₁ and B cells, or with the patient's cells. Those whose plasma does not react in this dilution are safe to use as universal donors. A conservative estimate would be that only one tenth of group O donors need be rejected as unsafe, and this simple procedure would obviate the need for expensive group substances. Incidentally, the injection of group O blood conditioned with group substances would cause a rise in titer of the isoagglutinins in the patient's serum, and it is not yet certain whether or not this might be harmful to a future infant, in case, for example, the patient is a woman of group O who later bears a group A child. Reference:

Wiener, A. S.: Pathogenesis of Congenital Hemolytic Disease Erythroblastosis Fetalis. I. Theoretical Considerations, *Amer. Jour. Dis. Child.*, in press.

CORONARY THROMBOSIS AND PREVENTIVE
INOCULATIONS

To the Editor:—An air cargo officer aged 38, 70½ inches (178 cm.) tall and weighing 145 pounds (66 Kg.), reported for physical examination and the inoculations necessary to leave the continental United States. On that occasion, at or about 2:15 p. m., he received 0.5 cc. of triple typhoid vaccine as prepared by the Army Medical School, 1 cc. of typhus vaccine (Cox) and 0.5 cc. of aluminum precipitated tetanus toxoid. Physical examination revealed the heart and blood vessels to be normal, the blood pressure 120/70; he was considered fit for arduous duty. Following the injections it is definitely stated that there was no collapse due to anaphylactic reaction or severe shock. On the evening of the same day symptoms characteristic of coronary occlusion developed. The patient was seen at about 8:30 p. m. by another physician, who reports that he complained of a severe pain in the region of his heart. The doctor was unable to make a diagnosis at this time but administered two hypodermics of morphine with scopolamine to relieve the pain. Another physician reported that examination of the heart with a stethoscope on the evening of the following day indicated a weak contraction and a friction rub over the lower heart area and that percussion revealed increased dullness to the right and left heart areas. The blood pressure at this examination was 105/80; the heart rate was not recorded. There was a rise in temperature, which continued for several days. Two days after the attack the leukocyte count was 15,000 and the blood pressure was 80/55. Electrocardiograms taken the first and third days subsequent to the incident revealing departure from normal predicate myocardial infarction of recent origin involving the anterior aspect of the ventricle. He was discharged from the hospital seven weeks later apparently in good condition, by ambulance. The final diagnosis was acute coronary thrombosis and myocardial infarction. Convalescence has been satisfactory. Was this patient's coronary thrombosis caused by the inoculations? If so, please discuss the mechanism by which this condition was produced.

Carroll E. Bingham, M.D., New York.

ANSWER.—It is probable that the attack of myocardial infarction secondary to acute coronary thrombosis had no definite relationship to the typhoid and tetanus inoculations that preceded it except an accidental one of coincidence in time. Considering the millions of persons of all ages who have received such inoculations, the precipitation of coronary thrombosis thereby should have become evident long ago. In years of experience with patients with coronary heart disease, infrequent coincidences of acute occlusion with one possible minor strain after another have been noted, but no direct relationship has been proved. Severe strain, as from trauma or strenuous effort, and prostration, such as may occur postoperatively, have, to be sure, seemed to favor the precipitation of an acute coronary thrombosis via a subintimal hemorrhage or rupture of a "cholesterol abscess," but in the absence of such severe strain no direct relationship can be deduced.

KÖHLER'S BONE DISEASE

To the Editor:—A white man aged 48 who was employed as a pin boy in a local bowling alley stated that about April 10, 1945 he was struck by a pin ball on the inner aspect of his left foot. This area became swollen, painful and ecchymotic. He was being treated for a contusion and then came to me on April 23, at which time no swelling or ecchymosis was present but there was exquisite tenderness over the region of the left scaphoid (tarsal) bone. The x-ray showed a small area of bone absorption involving the distal and medial portion of the tuberosity of the scaphoid bone and partially obliterating the bony trabeculations. I immobilized the foot in a cast, which I removed on May 23, at which time x-ray examination showed no material changes except that the cortical area appeared to be broken. Is this a cortical hemorrhage due to trauma which has caused an aseptic necrosis? What is advised as to treatment and prognosis?

M.D., Connecticut.

ANSWER.—The history of this patient suggests the possibility of Köhler's disease (osteochondritis) of the tarsal scaphoid. However, such conditions usually occur in younger persons. There is an excellent article by M. G. Karp on Köhler's disease of the tarsal scaphoid published in the *Journal of Bone and Joint Surgery* (19:84 [Jan.] 1937). Such a condition could be due to an acute bone atrophy of unknown etiology and may extend over many months but gradually responds to heat, massage and moderate activity. The subject of acute bone atrophy is well presented in an article by Thomas P. Noble and Emil D. W. Hauser published in the *Archives of Surgery* (12:75 [Jan.] 1926).

COMBINED IMMUNIZATION AGAINST WHOOPING
COUGH AND DIPHTHERIA—CORRECTION

The Query and Minor Note with this title published in *The Journal* April 21, 1945 stated that the combined diphtheria toxoid, alum precipitated, and pertussis vaccine produced by Eli Lilly and Company was made with "washed" bacteria. The firm writes that "washing" these organisms reduces antigenic potency and therefore this step is not employed in the preparation of "Perdipgen" nor is it used for the other vaccines of that company for active immunization against whooping cough.

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PENICILLIN IN THE TREATMENT OF SUBACUTE BACTERIAL ENDOCARDITIS

A PRELIMINARY REPORT ON TWENTY CASES
TREATED OVER ONE YEAR AGO

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In June 1942 an intern at the Philadelphia General Hospital suffering with subacute bacterial endocarditis was treated unsuccessfully by us with penicillin. The total dosage was 225,000 units given over a period of seven days. Similar results with relatively small dosage were observed by others. Subsequent to these early reports, Loewe and his associates¹ and Dawson and Hobbly² were successful in the treatment of this disease by employing larger amounts of penicillin over longer periods of time. Following these encouraging results the Committee on Medical Research began a more extensive study of the use of penicillin in this disease, and this report represents a part of that investigation.

MATERIAL

This paper deals with the use of penicillin in the treatment of 20 cases³ of subacute bacterial endocarditis in which therapy was started over one year ago. Not included in this report are 2 moribund patients, 1 of whom died following a cerebral thrombosis and the other as a result of a massive pulmonary hemorrhage after receiving the drug for only three and five days respectively. A third patient, who was not accepted for treatment because the infecting organism was highly resistant to penicillin, is also omitted.

CLINICAL DATA

The relevant data are shown in the accompanying table. Seventeen of the patients were adults ranging in age from 18 to 63 years, and the remaining 3 were

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The work described in this paper was done under contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the University of Pennsylvania.

1. Loewe, Leo; Roenblatt, Philip; Greene, H. J., and Russell, Morimer. Combined Penicillin and Heparin Therapy of Subacute Bacterial Endocarditis: Report of 7 Consecutive Successfully Treated Patients. *J. A. M. A.* 124:144 (Jan. 15) 1944.

2. Dawson, M. H., and Hobbly, G. L.: The Clinical Use of Penicillin. Observations in 100 Cases. *J. A. M. A.* 124:611 (March 4) 1944.

3. All of the patients were treated at the Hospital of the University of Pennsylvania except 1, who received treatment at the Philadelphia General Hospital.

children of 7, 10 and 12 respectively. Although it was impossible in many cases to determine the exact date of onset, the duration of disease at the time penicillin therapy was started has been approximated and found to vary from four to twenty-five weeks. Sixteen of the patients had rheumatic heart disease, 3 had congenital heart disease and the remaining 1 had arteriosclerotic heart disease. All of the patients in this study were of the white race.

INFECTING ORGANISM

Sensitivity of the infecting organism to penicillin was tested in all patients before treatment and was rechecked in those suffering relapses. The method used was similar to that described by Kolmer.⁴ Fifteen of the patients' organisms showed an original sensitivity to 0.025 unit and the remaining 5 cases were sensitive to 0.01 unit of penicillin. In patients that relapsed the organisms showed a definite loss of sensitivity to penicillin. Sensitivity studies were made with penicillin X in 1 case (15).⁵

TREATMENT

For the most part the method of administering penicillin, the dosage and the length of treatment in the present series were quite uniform. Patients were given, if possible, an initial course of 300,000 units of penicillin a day for fourteen days by continuous intravenous infusion. In cases with severe cardiac decompensation and in those in which suitable veins were not available the same amount of penicillin was administered intramuscularly. Patients in moderate cardiac failure tolerated the 3,000 cc. of intravenous fluid daily, if the solution was 5 per cent glucose in water and the dietary salt was kept low. As indicated in the table, the dosage and duration of therapy varied in patients requiring further treatment. No heparin was employed in the treatment of any of these cases.

RESULTS

Of the 20 patients included in this report, 16 showed a subsidence of infection; 12 of these are still alive and, with only 1 exception (18), are all well. The follow-up period in these cases varied from two to seventeen months. In this group of living patients 10 received only a single course (4,200,000 units over fourteen days) of penicillin, while the remaining 2 (15 and 18) suffered relapses and required additional treatment. One of these patients (15) received a total of over 86,000,000 units,⁶ administered intermittently during a period of almost twelve months, at the end of which

4. Kolmer, J. A.: Penicillin Therapy. New York, D. Appleton Century Company, Inc., 1945, p. 77.

5. Welch, Henry; Putnam, L. E.; Randall, W. A., and Herwick, R. P.: Penicillin X: Successful Treatment of Gonorrhea with a Single Intramuscular Injection. *J. A. M. A.* 126:1024 (Dec. 16) 1944.

6. The Donner Fund of the Hospital of the University of Pennsylvania made possible the continuation of penicillin therapy for several months in this case.

time the blood culture was still positive and the organism had become quite resistant to penicillin. This patient's organism was tested against penicillin X and found to be sensitive to 0.05 unit per cubic centimeter. The patient has been well for two months following the administration of 15,000,000 units of penicillin X over twenty-five days. The second patient (18) suffered three relapses, but since receiving 4,200,000 units intramuscularly over a period of twenty-one days she has been free from symptoms of the disease for over nine months. Within the past several weeks, however, she

patient (20) died suddenly with an acute coronary occlusion after being entirely free from symptoms and signs of infection for almost a year. These 4 patients all died outside the hospital and no postmortem studies were performed. Two patients (1 and 19) failed to respond to penicillin and died in the hospital. At post-mortem they were found to have active infection. Another patient (9) appeared to have responded to treatment only to die suddenly ten days later with what appeared to be an acute pulmonary embolism. The eighth patient who died (13) had two courses of

Analysis of Data on Twenty Cases of Subacute Bacterial Endocarditis Treated with Penicillin

No.	Age	Sex	Approximate Duration of Disease, Weeks	Primary Heart Disease	Infecting Type	Organism Penicillin Sensitivity, Unit/Cc.	Penicillin Therapy		No. of Infection Days Arrested	Result		Follow-Up, Months		
							Dosage, Units	Therapy Route		Present Status	Comment			
1	39	Q	12	Rheumatic	Streptococcus viridans	0.025 0.05	1/19/44 3/20/44	4,200,000 2,800,000	Intravenous Intramuscular	11 11	No	Died 4/9/44	Autopsy: vegetations on aortic and mitral valves	
2	31	Q	10	Rheumatic	Strep. vir.	0.025	1/24/44	4,200,000	Intravenous	14	Yes	Died 7/1/44	Cardiac failure; no autopsy	
3	51	F	6	Rheumatic	Strep. vir.	0.025	1/27/44	1,200,000	Intravenous	14	Yes	Living	Well	17
4	26	Q	22	Rheumatic	Strep. vir.	0.01	2/28/44	1,200,000	Intravenous	14	Yes	Died 9/24/44	Cardiac failure; negative blood culture; no autopsy	
5	35	Q	14	Congenital	Strep. vir.	0.025	2/28/44	4,200,000	Intravenous	11	Yes	Living	Well	16
6	41	Q	12	Rheumatic	Strep. vir.	0.025	3/1/44	4,200,000	Intravenous	11	Yes	Living	Well	16
7	44	Q	10	Rheumatic	Strep. vir.	0.025	3/13/44	4,200,000	Intravenous	14	Yes	Living	Well	25
8	10	Q	6	Congenital	Strep. vir.	0.025	3/16/44	1,200,000	Intravenous	11	Yes	Living	Well	15
9	23	Q	16	Rheumatic	Strep. vir.	0.025	3/21/44 4/7/44	2,000,000 2,100,000	Intravenous Intramuscular	7 7		Died 1/24/45	Probable pulmonary embolism; no autopsy	
10	39	Q	12	Rheumatic	Strep. vir.	0.025	4/1/44	4,200,000	Intravenous	14	Yes	Living	Well	14
11	46	Q	25	Rheumatic	Strep. vir.	0.01 0.05	4/14/44 5/20/44 6/16/44 6/22/44	4,200,000 4,200,000 1,800,000 8,660,000	Intravenous Intravenous Intravenous Intramuscular	14 14 14 29	Yes	Died 2/21/45	Cardiac failure; negative blood culture; no autopsy	
12	12	Q	16	Rheumatic	Strep. vir.	0.01	4/21/44	4,200,000	Intravenous	14	Yes	Living	Well	14
13	31	Q	10	Rheumatic	Strep. vir.	0.025 0.05	4/21/44 6/7/44 1/20/45	4,200,000 4,200,000 7,200,000	Intravenous Intravenous Intravenous	14 14 21	No	Died 3/7/45	Autopsy: Pseudomonas fluorescens endocarditis engrafted on subacute bacterial endocarditis	
14	35	Q	19	Rheumatic	Strep. vir.	0.025	5/11/44	4,200,000	Intravenous	14	Yes	Living	Well	11
15	26	Q	7	Rheumatic	Strep. vir.	0.025 0.05	5/16/44 7/10/44 8/24/44	4,200,000 1,200,000 3,900,000	Intravenous Intravenous Intramuscular	14 14 39	Yes	Living	Well	2
						0.5	10/2/44	8,600,000	Intramuscular	45				
						0.75	11/15/44	50,100,000	Intramuscular	167				
						0.05*	1/10/44	15,000,000	Intravenous	25				
								86,000,000		302				
16	7	Q	12	Congenital	Strep. vir.	0.01	5/17/44	4,200,000	Intravenous	14	Yes	Living	Well	13
17	19	Q	10	Rheumatic	Indifferent streptococci	0.025	5/25/44	4,200,000	Intravenous	14	Yes	Living	Well	13
18	48	Q	8	Rheumatic	Strep. vir.	0.025 0.05	5/30/44 7/31/44 8/20/44 10/8/44	4,200,000 4,200,000 5,600,000 4,200,000	Intravenous Intravenous Intramuscular Intramuscular	21 24 28 21	Yes	Living	Early cardiac failure	9
								18,200,000		84				
19	61	Q	4	Arterio-sclerotic	Indifferent streptococci	0.01	6/14/44 7/3/44 7/8/44	4,200,000 1,500,000 4,500,000	Intravenous Intravenous Intramuscular	14 5 9	No	Died 7/2/44	Autopsy: vegetations on aortic valve	
								10,200,000		28				
20	61	Q	8	Rheumatic	Strep. vir.	0.025	7/10/44	4,200,000	Intravenous	14	Yes	Died 5/27/44	Acute coronary occlusion; no autopsy	

* Penicillin X.

has developed signs of early cardiac failure with no evidence of active infection.

Eight of the patients in this study are dead (40 per cent). In this subgroup 3 (2, 4 and 11) died as a result of cardiac failure occurring five, six and three months after treatment. As indicated in the table, 1 of these (11) suffered relapses after receiving three courses of 300,000 units per day for fourteen days but apparently had a clinical subsidence of infection after receiving 50,000 to 100,000 units per day intramuscularly for three months. This patient died three months after therapy was completed from congestive failure with no signs of recurrence of infection. A fourth

therapy, developed a secondary pseudomonas infection and died during the third course of penicillin. In this case thirty cultures were taken at appropriate intervals for six months after the second course and were negative, despite the presence of a continuous fever.

As already mentioned, there were 6 patients (1, 11, 13, 15, 18 and 19) who relapsed clinically and in each the blood culture was found positive. The time for recurrence of fever averaged twelve days, the longest being thirty days after treatment was finished. Blood cultures were always positive two to three days later, except in 1 case (13), in which the interval was six months. In this group of relapsed cases there was

observed a definite loss of sensitivity of the organism to penicillin. The culture in 1 case (19) was unfortunately lost. The most striking example of acquired resistance occurred in a man (patient 13) who received penicillin for almost a year. In this case the organisms showed an original sensitivity to 0.025 unit, which increased to 0.75 unit. The same organism was tested against penicillin X and found to be sensitive to 0.05 unit.

ERADICATION OF POSSIBLE FOCI OF INFECTION

Since certain focal diseases may cause a recurrence of a case of subacute bacterial endocarditis, it is important that a careful search be made for possible foci of infection and their eradication effected if possible. Probably the most frequent focal diseases liberating bacteria into the circulating blood are tonsillitis, abscess of the teeth and otitis media. Because of the possibility of a transient bacteremia following tonsillectomy, dental extraction or the like we routinely administer sulfonamides or penicillin for several days before and after a surgical procedure. Furthermore, the patients are forewarned of the dangers of all dental manipulations and are advised to consult us about prophylactic measures if they contemplate having any dental work performed. Not included in this report is a patient with rheumatic heart disease who had a positive *Streptococcus viridans* blood stream infection and recovered following penicillin and the surgical removal of an arteriovenous aneurysm.

SUMMARY AND CONCLUSIONS

Twenty cases of subacute bacterial endocarditis were treated over one year ago with penicillin. Since there have recently appeared several excellent papers in which the salient features of this disease have been discussed, we will limit ourselves to several factors concerned with the management of these cases.

1. *Results of Penicillin Therapy.*—Of the 20 patients with subacute bacterial endocarditis, 16 had definite subsidence of their infection, 12 are still alive and with 1 exception are all well. Of the 8 who did not survive 4 were completely free of active infection and died as a result of heart disease. Three patients in this group failed to respond to therapy, and the eighth died soon after treatment was completed as a result of an acute pulmonary embolus.

2. *Establishment of Diagnosis by Positive Blood Cultures Before Starting Penicillin.*—Not infrequently a patient suffering with this disease is started on relatively small doses of penicillin before a positive blood culture is obtained. The dangers from this practice are threefold: 1. The organism may lose its sensitivity to penicillin. 2. The chances of obtaining a positive blood culture are lessened, despite the addition of penicillinase to the culture material. 3. The cardiac lesion itself undoubtedly progresses. Therefore it would seem best to withhold penicillin until a positive culture is obtained or, if the clinical diagnosis warrants, to administer adequate amounts of penicillin for the disease. In several cases, not included in this series, in which routine blood cultures were negative, we obtained positive results by employing anaerobic and arterial cultures.

3. *Adequate Penicillin Dosage.*—At this writing we are unable to make any conclusive statement regarding the amount or route of administration of penicillin for the treatment of this disease. As indicated, we employed 300,000 units a day for fourteen days as the initial course. This appeared adequate in 14 of the 20 cases.

However, in view of subsequent experience with 16 additional cases of the disease, not included in this report, we believe that all patients with subacute bacterial endocarditis should receive at least 500,000 units a day for at least five weeks.

We have used a continuous intravenous infusion of penicillin where possible, but we have no reason to believe that this method is any better than the intermittent intramuscular route. Sternal infusion of penicillin is practical for limited periods of time.

4. *Eradication of Possible Foci of Infection.*—As a precaution against reinfection, a careful search for possible foci of infection, such as infected teeth and tonsils, should be made, and, if surgical procedure is warranted, the patients are given full doses of sulfonamides or, preferably, penicillin before and after operation.

5. *Penicillin X.*—In a case in which the infecting organism had become highly resistant to penicillin, we employed penicillin X with apparent success.

RHEUMATOID SPONDYLITIS

A STUDY OF ONE HUNDRED CASES, WITH SPECIAL REFERENCE TO DIAGNOSTIC CRITERIA

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AND

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Although rheumatoid spondylitis is one of the most crippling of the chronic diseases affecting the spine, it has evoked but little interest except among rheumatologists and orthopedists. Contrary to general belief, the disease is a fairly common cause of chronic back complaints in young men. Often the diagnosis is not established for several years after the onset, and the early symptoms are frequently mislabeled as lumbago, fibrositis or muscular rheumatism, chronic low back strain, kidney disease or idiopathic sciatica. If physicians are alert, however, to the characteristic clinical and roentgenographic features of the disease, diagnosis should not be difficult even in the early stage.

A surprisingly large number of soldiers with chronic back disability suffer from rheumatoid spondylitis; 18 per cent of patients with chronic back complaints admitted to an army general hospital were found to have this disease. The majority of these were early or relatively early cases. Such a high incidence among young men makes an appreciation of the diagnostic features, especially the early manifestations, important to physicians.

NATURE OF THE DISEASE

Rheumatoid spondylitis is a chronic progressive disease of the spine the fundamental lesions of which occur in the diarthrodial or synovial joints; that is, the sacroiliac, small posterior intervertebral (joints of the articulating processes, apophyseal or facet joints) and costovertebral articulations. The intervertebral disks are not affected, nor are the vertebral bodies except for secondary demineralization. Calcific and later osseous changes develop in the paravertebral ligaments and, when pronounced, characterize the classic roentgenographic picture of a "bamboo spine"; but ligamentous

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calcification is not an essential feature. The pathologic process usually, but not invariably, begins in the sacroiliac joints and then may spread upward to involve progressively the synovial joints of the lumbar, thoracic and cervical regions. With continued progression, movement of the spine decreases, a thoracic stoop develops, the chest becomes relatively fixed in expiration and the neck may protrude, resulting in the clinical picture of a "poker spine." The process may become arrested at any point, however, and such extensive deformity need not always eventuate.

Whether the disease is but an expression of rheumatoid arthritis as it involves the spine or a separate pathologic entity remains disputed. The contention that it is an independent disease is based on the following facts: (1) The prominent ligamentous calcification and ossification, seen in the later stages of spondylitis, is not a feature of rheumatoid arthritis involving peripheral joints; (2) the sex incidence in spondylitis favors males, while peripheral rheumatoid spondylitis is more common in females; (3) chrysotherapy may produce remissions in some cases of peripheral rheumatoid arthritis but is ineffective in spondylitis; (4) roentgen therapy may be of value in spondylitis but does not alter the course of rheumatoid arthritis affecting the peripheral joints. Those who believe that the disease is but rheumatoid arthritis of the spine point out that (1) typical rheumatoid arthritis involving peripheral joints frequently coexists, (2) the sedimentation rate is elevated and (3) the pathologic changes in the diarthrodial joints of the spine during active phases resemble those found in rheumatoid arthritis.¹ We believe, as do many other American investigators,² that the evidence favors the concept that the disease is a variant of rheumatoid arthritis.

A myriad of synonyms for rheumatoid spondylitis have appeared in the literature, based on (1) concepts of the nature of the process, (2) variations in location of involvement and (3) whether the disease was acute or chronic, transient or progressive. Such confusing terms as rhizomelic spondylitis, Marie Strümpell's disease, spondylitis ossificans ligamentosa of Knaggs, von Bechterew's syndrome, ankylosing spondylitis, adolescent or juvenile spondylitis, spondylitis ankylopoietica and spondylarthritis have been offered. The lack of uniform terminology has fostered confusion regarding the disease among physicians.

MATERIAL AND STUDY

One hundred soldiers with rheumatoid spondylitis were selected for study. No case was included in which the diagnosis was equivocal; roentgenographic findings in the sacroiliac joints, characteristic of the disease, were present in each case. Clinical and x-ray investigations and their correlation were made while the patients were under observation in the hospital.

The cases were classified on the basis of severity as determined by (1) the rapidity of clinical progression, (2) the degree of disability as manifested by the presenting symptoms and physical findings, (3) the amount of constitutional reaction, the height of the

sedimentation rate and the degree of anemia and (4) the character of the roentgenographic changes. Such classification is more practical than a division based on roentgenographic findings alone, as has been suggested by some.³ Roentgenographic manifestations usually fail to reveal the actual extension of the process as noted clinically and, although often helpful in gauging activity, they do not accurately reflect the clinical course of the disease. Of the 100 cases studied 40 were classified as mild, 50 as moderate and 10 as severe.

INCIDENCE, AGE AND SEX

Of patients with complaints referable to the musculoskeletal system due to a variety of causes, including arthritis, admitted to the medical service, 7.5 per cent were found to have rheumatoid spondylitis. One patient with spondylitis was admitted for every 3 with rheumatoid arthritis involving peripheral joints alone. These figures are in sharp contrast to those based on civilian practice. For example, 26 cases among 1,179 patients with arthritis were recognized by Hare,⁴ an incidence of 1.7 per cent. The ratio of spondylitis to peripheral rheumatoid arthritis has been reported as 1:11,⁵ 1:13⁶ and 1:19.⁴ The relatively high incidence of the disease in soldiers may be explained by (1) the preponderance of males in the army of an age group for which the disease has a predilection and (2) the influence of physical activity and adverse living conditions incident to military service in bringing to light mild and early cases. It is not probable that military life in itself is a causative factor. Of interest is the fact that German writers noted an increased frequency of the disease among soldiers in World War I.⁷

All of the patients studied were males. Rheumatoid spondylitis is chiefly confined to the male sex, the ratio of males to females affected being approximately 20:1.⁸

Ninety-two per cent of our cases were observed during the third and fourth decades of life. The onset of symptoms occurred between the ages of 20 and 29 years in 69 patients, between the ages of 30 and 39 years in 16 and between the ages of 16 and 19 years in 15. These figures are consistent with the findings of others.⁹

ASSOCIATED PERIPHERAL RHEUMATOID ARTHRITIS

Typical rheumatoid arthritis of the peripheral joints coexisted in 18 of the 100 cases; in 5 others a past history of joint disability accompanied by swelling was elicited, which from description suggested rheumatoid arthritis. In 8 of the 18 cases the peripheral joints were affected first, in 6 the first symptoms were in the back, and in 4 the involvement was more or less simultaneous. The hips were involved in 3 patients, the knees in 10, the ankles in 4, the metatarsophalangeal joints in 10, the proximal interphalangeal joints of the toes in 2, the shoulders in 3, the elbows in 3, the wrists in 5, the metacarpophalangeal joints in 6 and the proximal interphalangeal joints of the fingers in 4. These

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1. Flynn, J. E.: Personal communication to the authors; unpublished data. Guntz, E., cited by Dunham and Kautz.²
2. Smyth, C. J.; Freyberg, R. H., and Lampe, Isadore: Roentgen Arthritis of the Spine (Marie-Strümpell's Disease and Osteoarthritis of the Spine, *J. Lab. & Clin. Med.* 22: 19-23, 1936. Hensch, P. S.; Bauer, W.; Boland, E. W.; Dawson, M. H.; Freyberg, R. H.; Hollbrook, W. P.; Key, J. A.; Lockie, L. M., and McKwen, C.: Rheumatism and Arthritis: Review of American and English Literature for 1940, *Ann. Int. Med.* 15: 1002-1108, 1941. Oppenheimer, A.: Diseases of Apophysal (Intervertebral) Articulations, *J. Bone & Joint Surg.* 20: 285-313, 1938.

findings do not support the opinion that small peripheral joints are rarely involved.¹⁰ Although the clinical and roentgenographic manifestations in the spine may be identical, some authors would classify those cases with associated small joint involvement as "rheumatoid spondylitis" and those without peripheral arthritis as "rhizomelic spondylitis." Such a division does not seem to be justified. The frequent association of rheumatoid arthritis of the extremities with the spinal changes of so-called rhizomelic spondylitis strongly supports the contention that the latter condition is rheumatoid arthritis of the spine.

PRECIPITATING FACTORS

Such possible precipitating factors as trauma, exposure, focal and other infections, psychic strain, gonorrhea and preceding subnormal health were studied in detail in each case. In 80 per cent no possible immediate precipitating cause could be elicited, and in the remaining 20 per cent no constant factor could be found. Eight patients dated their first symptoms to minor back trauma, but it is probable that in these injury merely brought an existing condition to light symptomatically. Four others had previously sustained incapacitating back injuries which were temporally unrelated to the onset of spondylitis. In 5 of the 100 cases acute gonorrheal urethritis was related to the onset of back symptoms, and in 8 others an unrelated past history of gonorrhea was elicited. The incidence of gonorrheal infection was approximately the same as that noted in patients with peripheral rheumatoid arthritis. The opinion expressed by some that gonorrhea may serve as an etiologic agent was not supported by the present study. Gonorrhea probably serves as a "trigger" mechanism (as may other infections) in some cases as it may in peripheral rheumatoid arthritis. In 1 instance a nonspecific urinary infection immediately preceded the first back symptoms. There was no definite relationship of dental, tonsillar or paranasal sinus foci of infection to the onset of spondylitis in any patient.

SO-CALLED PRESYNDYLITIC STAGE

Each patient was questioned in detail in an attempt to elicit and to evaluate peripheral muscle and joint complaints occurring prior to the onset of spinal symptoms. Scott¹² and others¹³ described a "prespondylitic stage" characterized by wandering fleeting pains in the shoulders, arms, ribs and legs during which the sacroiliac joints presumably were silently involved. They maintained that spinal symptoms did not develop until bony ankylosis of the sacroiliac articulations was nearly complete. The present study yielded no evidence to justify the concept of a so-called prespondylitic stage. In 10 patients we were able to elicit a history of migratory peripheral joint and muscle complaints with or without stiffness. Such complaints usually were not impressive, or they had characteristics which suggested the syndrome of "fibrositis." Except for those patients with, or a past history of, rheumatoid arthritis involving the peripheral joints the first definite rheumatic complaints were almost always located in the back.

CLINICAL PICTURE

Mode of Onset.—In 82 of 100 cases the onset was insidious. Almost invariably the first complaints were referred to the lower part of the back and in 84 per cent consisted of episodes of aching and stiffness, transient back pain or sciatica.

Episodes of aching and stiffness, lasting a few days at a time and then subsiding completely or almost completely, were the most frequent initial complaints. Occasionally these symptoms were persistent from the onset. Qualitatively the aching and stiffness presented characteristics of the syndrome of "fibrositis," that is, being most pronounced in the morning on arising, accentuated by physical inactivity and ameliorated by mild exercise, made worse by damp weather and temporarily relieved by local heat and by acetylsalicylic acid. Although the intensity varied, the symptoms were mild in most cases; but, in a few, disabling attacks often described as "lumbago" occurred. Later the aching and stiffness tended to be more persistent and to lose the typical characteristics of fibrositis.

Less frequently the first symptoms consisted of transient sharp pains or "catches" in the buttocks and hips and in the lumbosacral, sacral or lumbar regions. Often these were precipitated by twisting, jolting, bending, lifting, coughing or sneezing but at times occurred spontaneously. Later, if not at the onset, aching and stiffness accompanied such pain. As the disease progressed, pain tended to become a constant dull discomfort, often described as a "deep ache," a "tired feeling" or a "soreness" and aggravated by activity entailing weight bearing or movement of the back. Not infrequently the discomfort was pronounced at night.

In 8 patients the first symptom was sciatic pain. In 6 it was intermittent and in 4 it alternated from one side to the other. The sciatica associated with rheumatoid spondylitis is rarely severe, is seldom accompanied by neurologic findings and frequently alternates from side to side.

Miscellaneous types of onset were recorded in 16 cases. A vague "tired aching" in the lower part of the back, especially following walking or standing, was noted by 4. Thoracic girdle pains constituted the initial complaint in 3. Pain in the right costovertebral angle radiating into the inguinal region, simulating renal colic, was described by 1. Three patients recalled progressive limitation of back motion without actual discomfort. One patient, bedridden with severe peripheral rheumatoid arthritis, had noted only vague, ill defined backache. Three others, with long standing spondylitis, were unable to recall the initial symptoms.

Symptoms and Findings.—Although the overall pattern of rheumatoid spondylitis is fairly characteristic, the clinical picture at the time of examination is variable. The symptoms and findings are dependent on (1) the severity, rate of progression and duration of the disease, (2) the extent of spinal involvement and (3) the activity of the process at individual levels of the spine. The disease may be mild, moderate or severe; it may be localized to the sacroiliac joints or at the other extreme may involve the synovial joints of the entire spine; it may be semidormant and silent in one area while active and symptomatic in another. The severity of symptoms and the extent of the physical findings are dependent on such qualifying factors.

While the disease may begin at any level in the spine, it begins in the sacroiliac joints in the vast majority of instances. The process may subside temporarily or may terminate permanently at any point, but the ten-

10. Buckley, C. W.: *Ankylosing Spondylitis: Reports on Chronic Rheumatic Diseases*, No. 1. New York, Macmillan Company, 1936. Herrick, W. W., and Tyson, T. L.: *The Medical Aspect of Ankylosing Spondylitis* (Marie-Strümpell), *Ann. Int. Med.* 15: 994-1001, 1941. Golding,¹³ Buckley.⁹

11. Footnote deleted on proof.

12. Scott, S. G.: *Spondylitis Adolescents with Associated Pathologic Changes in the Sacroiliac Joints*, *Charterhouse Rheumat. Clin., Orig. Papers*, 1: 169-203, 1937. Scott.³

13. Golding, F. C.: *Spondylitis Ankylopoietics*, *Brit. J. Surg.* 22: 354-560, 1936. Hare.⁴

dency is toward a gradual and relentless spread to higher levels. Hence in most instances the sacroiliac joints are involved at the time of examination, and, as a rule, the lumbar spine is affected before symptoms appear in the thoracic spine. Occasionally, however,

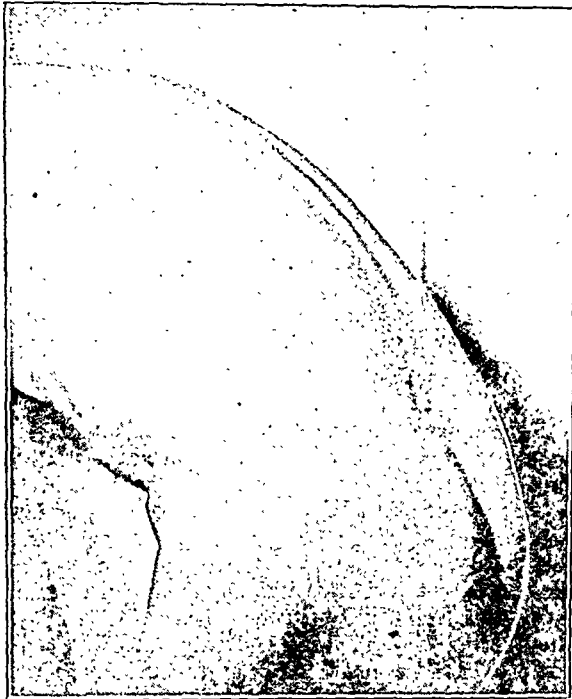


Fig. 1.—Contour of the normal back with the trunk moderately flexed. The contour may be normal when involvement is restricted to the sacroiliac joints



Fig. 2.—Moderately advanced rheumatoid spondylitis, showing limitation of motion and straightening of lumbar spine. Paravertebral muscle spasm is present in the lower thoracic and upper lumbar regions. Note the muscle atrophy in the lumbosacral area ("ironed out" appearance).

the disease apparently by-passes one or even two segments and consequently different combinations of symptoms and findings may be encountered. As it would

not be practical to describe all possible variations, an enumeration of the features resulting from involvement in individual segments may be useful.

Sacroiliac Involvement.—When these joints alone are the sites of active rheumatoid arthritis, the symptoms consist of aching, stiffness and pain in the lower part of the back which qualitatively have already been described. Sciatica occurs in approximately 10 per cent of instances. Tenderness over one or both sacroiliac joints may be elicited on percussion or deep palpation in over 50 per cent of patients with early changes; as ankylosis develops, tenderness (and pain) disappear. Various orthopedic maneuvers which produce sacroiliac joint movement may cause local pain. Mild lumbar paravertebral muscle spasm without restriction of lumbar motion is frequent; pronounced muscle spasm usually indicates lumbar apophysial joint involvement. In very mild cases or when the sacroiliac joints are ankylosed (and unaccompanied by higher involvement), physical signs may be entirely absent.

Lumbar Involvement.—The lumbar segment is rarely involved alone, and almost invariably the disease has extended from the sacroiliac joints. Pain, aching and stiffness, as already noted, remain the dominant symptoms but are not of great localizing value. Sciatica is not uncommon. Among the signs which signify involvement of the lumbar spine are (1) limitation of motion of the lumbar spine, (2) paravertebral muscle spasm, (3) straightening of the normal lumbar lordosis, (4) tenderness

(constant) to percussion and deep palpation over or just lateral to the lumbar spinous processes, (5) pain in the lumbar spine on flexion (anterior and lateral) and extension, (6) muscle atrophy, especially in the lower portion of the lumbar segment, which when combined with straightening gives the lower back an "ironed out" appearance (figs. 1 and 2), and (7) anterior stoop (usually associated with thoracic involvement).

Thoracic Involvement.—When the thoracic segment is affected the findings result from involvement of the thoracic posterior intervertebral joints, the costovertebral joints and the thoracic nerve roots. These include (1) tenderness (constant) on percussion and deep palpation over or just lateral to the thoracic spinous processes, (2) muscle spasm and later muscle atrophy,

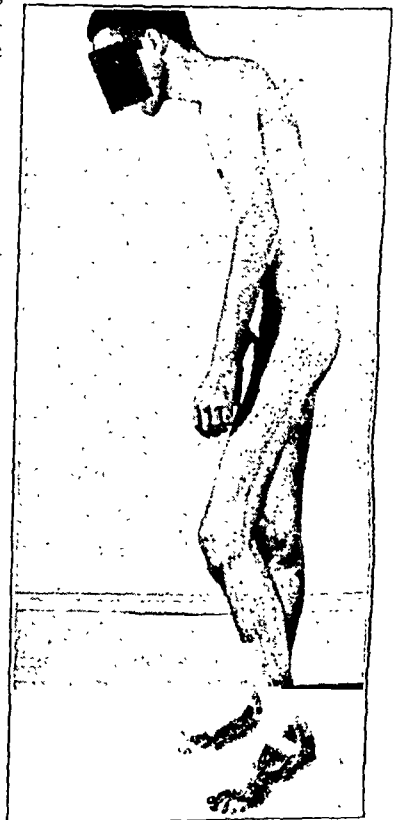


Fig. 3.—Characteristic posture in spondylitis involving entire spine. Note the lumbodorsal stoop, the flattened anterior chest and the protruded neck. Both hips are involved, with flexion deformity on the left.

(3) limitation of motion of the thoracic spine, (4) girdle pains, (5) diminished chest expansion with reduction of vital capacity, (6) flattened anterior chest (expiratory position, fig. 3), (7) chest pain on forced inspiration and (8) thoracic kyphosis (thoracolumbar stoop).

Cervical Involvement.—With involvement of this segment the features presented are (1) tenderness (constant) on percussion and palpation over the posterior neck, (2) pain (constant) on forced motion of the cervical spine, (3) restricted motion of the neck, (4) spasm and later atrophy of the cervical muscles, (5) protruded position of the neck and (6) cervical radicular pain (rare).

Constitutional Reaction.—General constitutional symptoms such as weakness, fatigue, anorexia, weight loss and low grade fever are rarely prominent features of spondylitis unless the disease is severe or unless peripheral joints are concomitantly involved. Such reaction, as a rule, parallels the height of the sedimentation rate. Mild cases may be accompanied by minimal or no constitutional symptoms, and many patients may

paraspinal ligaments. Except for secondary demineralization the vertebral bodies are not affected. The intervertebral disks remain intact.

X-ray alterations of the synovial joints result from destruction of articular cartilage and changes in the subchondral bone. When the pathologic process is



Fig. 4.—Normal sacroiliac joints. Note the clear joint spaces and the sharp borders.

pursue useful occupations for years without appreciable alteration in general health.

Laboratory Findings.—The erythrocyte sedimentation rate serves as the most consistent laboratory gage of activity in spondylitis, just as it does in peripheral rheumatoid arthritis. It was elevated in 78 of 100 cases. The usual range was between 20 and 60 mm. in one hour (modified Westergren, normal under 20 mm. in one hour for males), the most rapid being 112 mm. in one hour. In several patients with mild but active disease the sedimentation rate was repeatedly within normal limits. Others have observed that when the disease is mild with insidious onset and slow progression the sedimentation rate may be normal.¹⁴ Moderate hypochromic anemia was present in 28 patients.

ROENTGENOGRAPHIC FEATURES

The roentgenographic features of rheumatoid spondylitis are quite characteristic. In general they are reflections of those pathologic changes which develop in the sacroiliac and apophysial articulations and in the



Fig. 5.—Moderately advanced mild rheumatoid spondylitis. The sacroiliac joints are blurred and the margins are indistinct. Note the juxta-articular increase in bone density in the ilium and sacrum.

restricted to the synovial membrane, the x-ray appearances are normal. Synovitis may exist for months or even for two to three years before cartilage or bone is sufficiently modified to be recorded by roentgenograms. Hence symptoms of the disease may be present long before positive x-ray diagnosis is possible. Similarly, in patients with ascending disease there is an appreciable lag between the development of physical findings and x-ray alterations.

Sacroiliac Joint Changes.—Significant alterations in the sacroiliac joints existed in each of the 100 patients; the involvement was bilateral in 96. Although rheumatoid spondylitis may be suspected on clinical grounds alone, we have hesitated to make an unequivocal diagnosis when the sacroiliac joints have appeared normal.



Fig. 6.—Moderately advanced rheumatoid spondylitis of moderate severity. The sacroiliac joints are indistinct and mottled. Note the serrated sacroiliac joint borders and the juxta-articular sclerosis.

Abnormalities in these joints almost invariably are more definite, more advanced and more diagnostically reliable than are alterations elsewhere in the spine.

The normal sacroiliac joint in young men is clear and its borders are sharply outlined. The earliest changes in spondylitis consist in a blurring or "ground"

¹⁴ Forestier, J.: Importance of Sacroiliac Changes in the Early Diagnosis of Ankylosing Spondylarthritis; Marie Strümpell Boeckler Disease, *Radiology* 33: 280-402, 1939. Golding.

glass appearance. The margins are no longer distinct or they may appear broken. The juxta-articular portion of the ilium and frequently the sacrum may demonstrate increased density, spotty osteoporosis or both.

Subsequent changes are at least partially dependent on the severity and the duration of the disease. When the process is mild, juxta-articular sclerosis is more prominent than spotty rarefaction, and mottling of the joint space is minimal or absent (figs. 4 and 5). Rather, the joint space tends to become less distinct and more narrowed until ankylosis finally develops. When the disease is more severe the joint space appears widened and irregularly mottled (fig. 6). The lower portion may assume a "honey combed" appearance, and later extensive "rosary" formation or scalloping with cystic caries of the margins may be found. Complete dissolution with fragmentation and disappearance of sacroiliac contours is an occasional extreme finding. Concomitantly, varying degrees of sclerosis and localized rarefaction in the adjacent ilium and sacrum occur. In general the degree of spotty juxta-articular bone atrophy and joint mottling seem to vary directly with the activity of the disease. When ankylosis begins to develop, subchondral sclerosis becomes more apparent, mottling is less pronounced and the joint space gradually becomes narrowed. When synostosis is established, the areas of increased density fade. Eventually there is continuity between the sacrum and ilium with little or no trace of the joint (fig. 7).

Posterior Intervertebral (Apophysial) Joint Changes.—By no means were changes in the apophysial joints as definite or as constant as those in the sacroiliac articulations. Even with the use of special technics, detailed studies often yielded disappointing results. In no instance in this series were there typical findings in the apophysial joints without accompanying evidence of sacroiliitis. When apophysial changes were found usually only a few scattered joints were abnormal while intervening ones appeared normal. Presumably the pathologic process in the interposed normal appearing articulations had not produced sufficient cartilaginous or bony change to be registered roentgenographically.



Fig. 7.—The sacroiliac joints are ankylosed. Note the demineralization, which is a common finding when fusion is complete.

Qualitatively, the apophysial alterations were similar to those found in the sacroiliac articulations. Early there were haziness and indistinct outlining of the joint. Stippled decalcification and/or sclerosis of the articular process was often evident. Later, in more severe cases, erosion, scalloping or perhaps a single cystic rarefaction of the facet surface was a typical finding. All degrees of destruction have been noted in the same

spine with completely normal intervening joints at some levels. As in the sacroiliac joints, the final event consisted of bony ankylosis, but even in this phase not all the joints of an involved segment were fused.

Paraspinal Ligament Changes.—Calcification and ossification of the paravertebral ligaments do not develop until the disease is moderately advanced. The anterior,

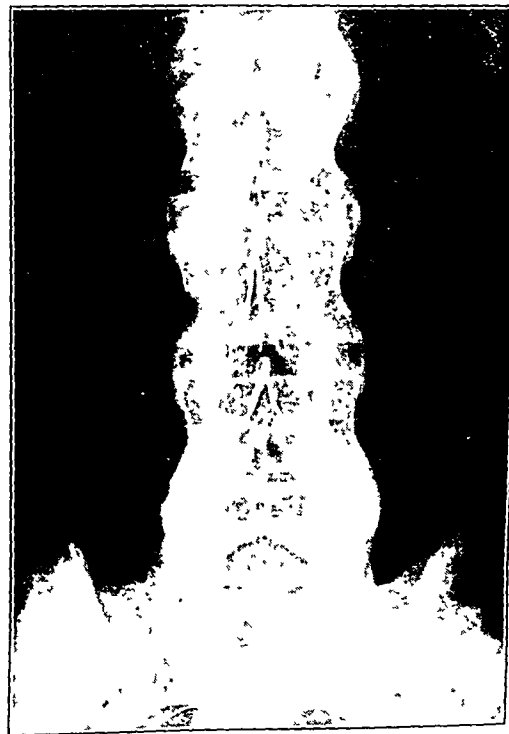


Fig. 8.—Extensive ligamentous calcification producing the terminal picture of a "bamboo spine." Note the secondary demineralization of the vertebral bodies. The intervertebral disc spaces are normal in height and contour.

lateral and posterior longitudinal ligaments and the ligamenta flava are the usual sites of calcific changes. Calcification most often begins in the lower thoracic and upper lumbar portions of the spine. All degrees of calcification and ossification may be found, ranging from fine penciled lines in the anterior spinal ligament to extensive "bambooning" (fig. 8). In a few exceptional cases definite ossification of the ligaments was observed in the lower thoracic and upper lumbar spine when only minimal and early changes were present in the sacroiliac articulations. In these instances the disease probably began in the apophysial joints of the thoracolumbar spine rather than the sacroiliac articulations.

CLINICAL COURSE

The course of rheumatoid spondylitis is extremely variable and to a large degree is dependent on the severity of the disease. Mild cases, which are characterized by insidious onset, little or no elevation of sedimentation rate, minimal or no constitutional symptoms and x-ray changes showing predominant juxta-articular sclerosis rather than spotty osteoporosis or joint mottling, tend to run a relatively benign course. Symptoms may be mild and not incapacitating for years. Progression of the disease is gradual but none the less relentless, and the stage of "poker back" deformity may not be reached for fifteen to twenty-five years. As has already been pointed out, the disease may, however, temporarily or permanently subside at any point. For example, it may terminate before it has extended beyond

the sacroiliac joints, and the only residue of the disease may be the x-ray "ashes" of completely ankylosed sacroiliac joints. To be kept in mind is the fact that an apparently "burned out" process may become reactivated at any time.

In moderately severe cases back disability is usually of sufficient severity for the patient to seek medical aid. Progression is more rapid, the sedimentation rate is almost invariably elevated and the roentgenograms reveal changes which signify a higher degree of disease activity. Pronounced restriction of back motion, diminished chest expansion, lumbodorsal stoop and neck involvement may be evident within five to ten years in those cases which show continued extension. The activity of the disease may fluctuate, however, and there may be alternating periods of temporary improvement and exacerbation.

Severe instances of the disease usually demonstrate pronounced back disability, definite constitutional reaction and rapid progression. We have observed extreme deformity with complete rigidity of the spine in all segments ten months after the first onset of symptoms. In some, spondylitis is merely a part of a severe generalized rheumatoid arthritis in which the peripheral joints share equally in the involvement.

DIAGNOSIS

When rheumatoid spondylitis has advanced sufficiently to produce characteristic physical and roentgenographic signs, little difficulty should be encountered in diagnosis. Such clinical features as progressive limitation of spinal motion, pronounced muscle spasm, straightening of the normal lumbar lordosis, muscle atrophy, lumbodorsal stoop, diminished chest excursion, flattening of the anterior thorax or protrusion of the neck, when observed in almost any combination, should serve as adequate clues. Such roentgenographic findings as bilateral sacroiliitis, apophysial joint changes and calcification of the lumbar spine, perhaps accompanied by calcification and ossification, should confirm the diagnosis. Other features, such as an elevated sedimentation rate, constitutional symptoms or associated peripheral rheumatoid arthritis, serve as additional evidence. The extreme case with poker back deformity can be readily spotted on the street corner.

Early cases may be easily missed, however, unless the possibility of the disease is considered in every patient with chronic back complaints. The following points, axiomatically summarized, may be helpful in recognizing early rheumatoid spondylitis:

1. Suspect rheumatoid spondylitis when a young man complains of chronic recurrent or persistent low back aching and stiffness, with or without catching pains, especially if the sedimentation rate is elevated.

2. Suspect rheumatoid spondylitis in the young man who complains of such vague symptoms as a "tired feeling" in the lower part of the back on standing and walking, persistent low back soreness, silent restriction of back motion, or indefinite sharp pains in the buttocks, hips or lower part of the back, especially if accompanied by an elevated sedimentation rate or general constitutional symptoms.

3. Suspect rheumatoid spondylitis in all cases of sciatica in young men, particularly if recurrent or alternating from side to side or associated with aching and stiffness of the lower back.

4. Suspect rheumatoid spondylitis in patients with thoracic girdle pains, especially if accompanied by symptoms in the lower part of the back.

5. Suspect rheumatoid spondylitis when persistent back symptoms develop in a patient with peripheral rheumatoid arthritis.

6. In the absence of roentgenographic evidence of sacroiliac involvement an unequivocal diagnosis of rheumatoid spondylitis should not be made unless characteristic changes are present in the apophysial joints.

7. Remember that characteristic x-ray changes in the sacroiliac or apophysial joints may not develop for months after the onset of symptoms. Do not eliminate the possibility of rheumatoid spondylitis on negative x-rays alone unless persistent symptoms have existed for at least three years.

8. Definite bilateral destructive and/or sclerotic changes in the sacroiliac joints, noted roentgenographically, almost invariably indicate rheumatoid spondylitis.

9. Be cautious in making a diagnosis of rheumatoid spondylitis with unilateral sacroiliac involvement unless other characteristics of the disease are present or unless peripheral rheumatoid arthritis coexists. Persistent unilateral sacroiliitis may be due to tuberculosis.

10. Calcification of the paravertebral ligaments may result from several causes and in itself is not sufficient evidence for the diagnosis of rheumatoid spondylitis; changes in the apophysial and/or sacroiliac joints must also be present.

11. Remember that the sedimentation rate may be normal in 15 to 20 per cent of cases with active disease and that constitutional symptoms are usually milder than in rheumatoid arthritis involving peripheral joints.

EARLY RISING IN THE PUERPERIUM

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AND

HARRY S. FIST, M.D.

LOS ANGELES

HISTORICAL BACKGROUND

The practice of early rising of parturient women dates back to ancient times. Although it was recently stimulated by the wartime shortage of obstetric beds, it did not arise from that emergency. The puerperium, or time of rest given to women in childbed, has varied more widely in the customs of different peoples than any other feature of that great physiologic function of woman.

The biblical Israelites considered the puerpera unclean for seven days after the birth of a male child and for fourteen days after the birth of a female child, during which period she was required to remain at home.¹ The longer period of isolation after a female child has been attributed to their belief that the female sex, being inferior, require a longer period to restore cleanliness. In Athens the puerpera was considered unclean, and whoever touched the mother was forbidden to visit an altar. There can be no doubt that these religious practices in and of themselves enforced a period of at least partial rest during the puerperium. However, the northern tribes of Russia, the Samojedes and others who considered the puerpera unclean often left her

¹From the Department of Obstetrics and Gynecology, Cedars of Lebanon Hospital.

Miss Goldie Stein of the Cedars of Lebanon Hospital record room assisted in collecting the records.

²1. Rengy, A. J.: *Childbirth: Yesterday and Today*, New York, Emerson Books, Inc., 1937, p. 31. Kotelman: *The Ancient Hebrews*.

in such a state of isolation and neglect that both mother and child perished.²

In Egypt the wealthier class of women remained in bed three days post partum, but poor women usually resumed their occupations in one day. Syrian women were permitted six days of rest.

The Wakamba of Africa put their parturient women to work after a four day confinement. The North American Indians and other Indian tribes observed no period of puerperium, their women returning to work the day of delivery, following the ceremonial bath, which was often performed in the river.³ In this connection Dr. J. Fields⁴ wrote in 1883 "During two and a half years' life among the Indians I never saw or heard of a case of puerperal fever, puerperal eclampsia or any other diseases peculiar to lying-in women."

Sioux Indian squaws have been known to go into the woods in the cold months of winter and, while there, to give birth to the papoose, which they brought back, together with a load of wood to keep the home fires burning. According to Engelmann, the Apache Indians believed it essential that as soon as the placenta was expelled the parturient be kept upright and walking, for a half hour in order that all clotted blood be expelled from the womb.⁵ The same authority also stated that the Japanese, prior to the nineteenth century, shared in this belief concerning the upright position and kept their parturients propped up in a sitting position for three days before allowing them to recline.

In the Antilles and Guianas food was offered as soon as delivery was completed, and after a few hours the usual labor of the household was resumed by the patient. In old Calabar, in Greenland and among certain Canadian tribes the custom formerly practiced was to allow the delivered woman immediately to resume her household duties while the husband went to bed and received the visits of friends and relatives.⁶

The English obstetrician Charles White⁷ of Manchester wrote in 1793 "The parturient should lie very high with her head and shoulders and should sit up in bed many times a day, especially when she takes food, and as often as she suckles her child, and she should kneel whenever she has occasion to make water, which should be done often. The frequent upright posture is of the utmost consequence and cannot be too much enforced. It prevents the lochia from stagnating, the stools and urine from being too long retained, and promotes the contraction of the uterus, together with that of the abdominal muscles."

In reference to early puerperal rising, Charles White also wrote "The sooner she gets out of bed after her delivery, the better; even on the same day if possible; she should not defer it beyond the second or third at the farthest, and then if it be winter time it will be necessary to have a fire." From his writings it appears that Charles White believed early puerperal rising was a prophylaxis against puerperal fever.

Rotstein⁸ asserted that it had been demonstrated that the early rising of puerperal women necessitated by the London blitz of 1940-1941 did not result in

harm to the patient, and he advocated this method of puerperal management. Several other reports advocating early puerperal rising appear in American and foreign literature. More recently, Black⁷ reported an increased obstetric bed turnover at the Alameda County Hospital, Oakland, Calif., by allowing his patients home early in the puerperium. In his reported series of 3,400 cases about one third were discharged on their fourth day, 30 per cent between the fourth and eighth days and 35 per cent after the eighth day. Although not clearly stated in Black's article, we may presume that most patients were ambulatory at the time of discharge from the hospital. He reported that no complications resulted from this practice. Black concluded after a twelve year program, during which the hospital staff cared for 12,000 deliveries, that a short, active puerperium was safe and desirable. The patients in the entire series were allowed out of bed at varying intervals according to their condition.

Armand⁸ claimed that, in a group of 200 puerperal women in Haiti, early rising prevents thrombosis and embolism, aids uterine involution, helps lochial drainage and fosters quick recovery. He did not observe a single case of inversion, prolapse or retroversion of the uterus. He strongly advocates early rising in the puerperium regardless of the type of delivery. Jorge⁹ allowed only normal puerperal women to get up and reported evident benefit. Vara¹⁰ writes that in the women's clinic at Helsingfors 4,447 women were allowed out of bed very soon after delivery, with resulting improvement in bowel and bladder function and less incidence of thrombosis than in those who were kept in bed for longer periods.

Greenhill¹¹ writes: "Beginning about twenty years ago I gradually cut down the number of days my obstetric and gynecologic patients remained in bed. Now I have progressed so far that, if my obstetric patients cannot urinate spontaneously eight to ten hours after delivery and are uncomfortable as a result of a full bladder, I have them helped out of bed either to sit on a commode or to go to the toilet if there is one in the room. Naturally, women who have bled a great deal or have had complications are not permitted to do this, but at least 90 per cent of parturient women could be permitted out of bed on the first day without harm. . . ." Nelson and Collins¹² reported good results in both obstetric and gynecologic cases in which cotton sutures, together with early ambulation, were employed.

The practice of early ambulation of surgical patients, now a widely accepted procedure, advocated by hundreds of articles in the American and foreign literature, must be considered intimately related to the practice of early puerperal rising. The objectives and underlying principles of the two are identical. Newberger, in a collective review,¹³ presented 189 references advo-

² Engelmann, G. J.: *Labor Among Primitive Peoples*, St. Louis, J. H. Chambers & Co., 1883.

³ Corlett, W. T.: *The Medicine Man of the American Indian and His Cultural Background*, Springfield, Ill., Charles C. Thomas, Publisher, 1935.

⁴ Fields, J., cited by Engelmann: *Labor Among Primitive Peoples*, p. 32.

⁵ White, Charles: *Treatise on the Management of Pregnant and Lying in Women*, 1793, Worcester, Mass., I. Thomas, 1793.

⁶ Rotstein, M. L.: *Getting Patients Out of Bed Early in the Puerperium*, J. A. M. A. 125: 838-840 (July 22) 1944.

⁷ Black, B. W.: *Do Normal Maternity Cases Require Ten Days in Hospital?* Mod. Hosp. 60: 52-53 (Feb.) 1943.

⁸ Armand, F. M.: *Lever precoce dans les suites des couches*, Obst. gynec. latino am. 1: 688-697 (Dec.) 1943.

⁹ Ferreira Jorge, Cid: *Levantar precoce em obstetrica e o servico de assistencia obstetrica a domicilio*, Rev. de gynec. e d'obst. 2: 288-291 (Nov.) 1943.

¹⁰ Vara, P.: *Beobachtungen über das "Frühauftreten" nach gynäkologischen Operationen bzw. Entbindungen*, Acta obst. et gynec. Scandinau. 21: 168-179, 1941.

¹¹ Greenhill, J. P.: *Year Book of Obstetrics and Gynecology*, Chicago Year Book Publishers, Inc., 1944.

¹² Nelson, E. W., and Collins, C. S.: *Cotton Suture Material and Early Ambulation in Obstetrics and Gynecology*, Surgery 12: 107-114 (July) 1942.

¹³ Newberger, B.: *Early Postoperative Walking, Surgery* 13: 692-695 (May) 1943.

cating early rising of surgical patients. He enumerates the following advantages gained from his study of the literature:

1. Asthenia is minimized.
2. The morale of the patient is lifted.
3. Economy to both patient and hospital is obtained through more rapid convalescence and through reduction of nursing personnel and more efficient use of bed space.
4. Military surgery may be rendered less hazardous.
5. Simplification of postoperative care is obtained.
6. Pulmonary complications are reduced four to five fold.
7. Hollow viscus atony is reduced, with consequent avoidance of use of catheters and laxatives.
8. Wound healing is improved.
9. Thrombosis and embolism are reduced.

Leithauser¹⁴ reported excellent results in several hundred surgical patients who were got up during the first twenty-four hours following surgical operation and claimed that this treatment prevented most pulmonary and circulatory complications. He studied twenty-nine articles from the foreign literature, among which was the particularly impressive report of Zava¹⁵ of 6,000 patients who were got out of bed on the first day without the occurrence of a single case of embolism or eventration. It is interesting to observe that Newberger¹³ showed that the comparative healing of wounds was better in ambulated than in nonambulated rats.

Many observers, including Churchill and McNeile,¹⁶ have noted a definite decrease in the minute volume respiratory exchange of postoperative patients. This decreased respiratory exchange results from such factors as the depression caused by preoperative medication, the use of depressant anesthetic agents and various other factors, such as muscle splinting. Beecher¹⁷ established that this reduction is most pronounced in the first twenty-four hours. Hoerr¹⁸ showed that 50 per cent of all primary postoperative pulmonary complications occur within the first twenty-four hours and that 90 per cent make their appearance before the end of the fourth day. Leithauser¹⁴ reported that spirometer readings showed that vital capacity returned to normal much sooner after early rising.

One of us (G. R.) had advocated and practiced since 1940 the early ambulation of postoperative gynecologic patients. In a report to the obstetric and gynecologic staff of the Cedars of Lebanon Hospital in 1941 he also advised the use of the transverse abdominal incision in obstetrics and gynecology, pointing out that patients operated on in this manner could advantageously be made ambulatory within twenty-four hours. In patients in whom the transverse incisions were made there occurs less postoperative discomfort and there is a lower incidence of postoperative hernias and eviscerations. Consequently patients operated on in this manner can be more safely got up within the first day, as compared to those in whom the more conventional types of incisions are made. Accordingly, in the cesarean sections to be reported later in this paper the transverse abdominal incision was used except when a previous midline incision existed.

With this background of favorable evidence in the literature, the task of studying early ambulation in the

puerperium was begun. At the outset it was realized that there would be objections both from patients and from the medical profession to the practice of early ambulation. The following objections arose during the course of our study:

Objections by Doctors.—1. Fear of medicolegal consequences. 2. Fear that episiotomies would break down. 3. Fear that there might be too much strain on the pelvic floor, resulting in prolapses and retroversions. 4. Fear of excessive postpartum bleeding. 5. Fear that patients would not approve of early rising.

Objections by Patients.—1. That the procedure was unfamiliar to them, therefore they were not sure it was good. 2. That they needed rest and it might tire them too much to get up. 3. That they were too weak to walk. 4. That arising might make them bleed too much. 5. That they might "break their stitches."

We believed that these objections were more theoretical than actual, therefore an attempt to evaluate them accurately was begun.

TABLE 1.—Statistics

Total number of cases in series.....	582	
Total cesarean sections.....	50	8.6%
Early risers.....	229	39.3%
Vaginal deliveries.....	104	
Spontaneous.....	104	
Low forceps.....	107	
Mid forceps.....	4	
Breech extraction.....	10	
Version.....	1	
Twins.....	3	
Cesarean section.....	18	7.9%
Intermediate risers.....	106	18.2%
Vaginal deliveries.....	103	97.2%
Spontaneous.....	83	
Low forceps.....	65	
Mid forceps.....	3	
Breech extraction.....	0	
Version.....	0	
Twins.....	2	
Cesarean section.....	3	2.8%
Late risers.....	229	39.3%
Vaginal deliveries.....	200	87.3%
Spontaneous.....	85	
Low forceps.....	92	
Mid forceps.....	10	
Breech extraction.....	9	
Version.....	0	
Twins.....	4	
Cesarean section.....	29	12.7%

METHOD OF STUDY

The articles, such as that of Black,⁷ which have advocated mobilization of puerperal women in an intermediate period had led us to the division of our total group of 582 obstetric patients into three groups as follows:

1. Early risers: ambulatory on first or second postpartum day.
2. Intermediate risers: ambulatory on third or fourth postpartum day.
3. Late risers: ambulatory later than the fourth postpartum day.

A consecutive series of 229 unselected patients delivered by us prior to March 1944 was taken from the files in the record room. These patients had all been made ambulatory later than five days post partum. These are called "late risers" and serve as controls. Beginning with March 1944, 106 delivered women, unselected in any manner, were made ambulatory on the third or fourth postpartum days. These women, the "intermediate risers," were given the privilege of going to the bathroom, which was always in the room, instead of using bed pans. In addition, they could eat their meals out of bed if desired, leave the bed to bathe and remain up while the bed linen was being changed. However, the rest of the time they were

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 18. Hoerr, S. O., and Culter, E. C.: Postoperative Pulmonary Complications. Proc. Internat. Postgrad. M. A. North America 9: 232-237, 1942.

asked to remain in bed. Thus, the time actually spent in bed must have amounted to 95 per cent of the total time. The routine as regards postpartum care was otherwise not changed.

During the interval in which the "intermediate riser" group was being accumulated, we began to study an

TABLE 2.—Bladder Function

	Early		Intermediate		Late	
	No.	%	No.	%	No.	%
Number in series.....	247		106		229	
Number studied *	246	100	104	100	229	100
Number of patients requiring catheterization	87	35.4	42	10.1	80	33.9
Number of patients not requiring catheterization	159	64.6	62	59.6	149	61.1
Total number of catheterizations †	266		171		141	
Average number of catheterizations per patient.....	3.0		4.0		3.8	
Voiding began on first postpartum day	240	97.6	96	92.3	221	96.5
Voiding did not begin on first postpartum day	6	2.4	8	7.7	8	3.5
Voiding complete on first postpartum day (as shown by study of residual urine).....	223	90.7	73	70.2	200	87.3
Voiding not complete on first postpartum day	23	9.3	31	29.8	29	12.7
Clinical urinary infections.....	0		1	0.96	1	1.7

* In 3 cases retention catheters were inserted and these cases are therefore not included.

† Table 3 shows the distribution of catheterizations among the groups.

unselected series of women who were made ambulatory during their first or second postpartum days. This group, comprising 247 patients, is called the "early risers."¹⁹ Aside from early ambulation, there were no changes made in the management of these patients. Patients delivered by cesarean section were included in this series without selection.

TABLE 3.—Distribution of Catheterizations

Number of Times Patients Were Catheterized	Early (87 Patients)		Intermediate (42 Patients)		Late (80 Patients)	
	No.	%	No.	%	No.	%
1	27	31	15	35.7	15	16.8
2	22	25.3	10	23.8	22	25.0
3	18	20.7	4	9.4	16	18.0
4	6	6.9	4	9.4	10	11.2
5	5	5.7	2	4.7	12	13.5
6	3	3.4	0	0	1	1.1
7	0	0	1	2.3	4	4.5
8	2	2.3	1	2.3	0	0
9	2	2.3	1	2.3	2	2.2
10	0	0	2	4.7	2	2.2
11	0	0	1	2.3	1	1.1
12	0	0	0	0	1	1.1
13	0	0	0	0	0	0
14	0	0	0	0	1	1.1
15	1	1.1	0	0	0	0
16	0	0	0	0	1	1.1
17	0	0	0	0	0	0
18	0	0	1	2.3	0	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	0	0	0	0
22	0	0	0	0	0	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0
25	1	1.1	0	0	0	0

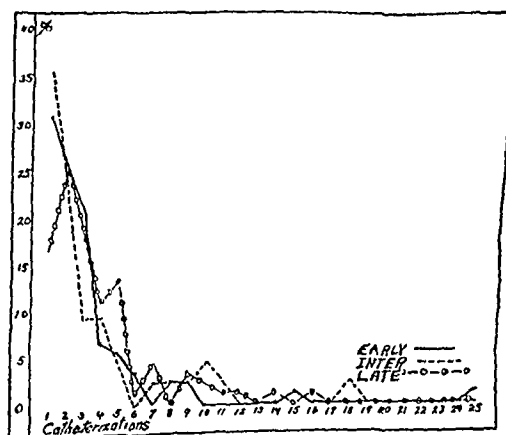
Of a total of 532 patients in our series delivered vaginally 481, or 90.4 per cent, were administered caudal block anesthesia, while 49 of a total of 50, or 98 per cent of patients delivered by cesarean section, were operated on under subarachnoid block.

In our entire series of 582 cases no changes in delivery or operative technic were made. All episiot-

omies were repaired routinely with number 0 and number 00 chromic catgut, without retention sutures. Abdominal incision closures were done routinely with number 0 and number 00 chromic catgut in continuous strands, with a few interrupted sutures placed in the fascia. No retention sutures were used, except when the incision was in the midline.

All patients requiring catheterization were catheterized at least one time for residual urine after voiding had begun, and, if this amount was above 50 cc., catheterization was repeated after each voiding until the amount of residual urine was 50 cc. or less. Patients who voided apparently normal amounts of urine without difficulty and at normal intervals were not catheterized at all. The estimations as to the amount of lochia or of the amount of postpartum bleeding were made from our observations during our rounds at the hospital, in addition to the reports of the obstetric nurses in attendance. Involution of the uterus was ascertained by a vaginal examination made on each patient at the time of discharge from the hospital.

All patients delivered vaginally remained in the hospital six to eight days, depending on the number of available beds, while the patients delivered by cesarean



Catheterization curves for the three groups

section remained eight to ten days. Only 12 patients, or 2 per cent of the entire series, stayed a few days beyond these limits, the majority of these because of minor complications. There were no serious complications in the entire series of 582 patients.

ANALYSIS OF STATISTICS

The study of bladder function, as shown in table 2, reveals that approximately 35 per cent of the early risers required catheterizations averaging three per patient, while approximately 40 per cent of the intermediate and 40 per cent of the late risers required catheterizations averaging four per patient. Table 3 shows that 77 per cent of the total catheterizations in the early group, 69 per cent in the intermediate group and 60 per cent in the late group occurred in the first three postpartum days. There were 5 cases of urinary infection, all of which occurred in the intermediate and late groups.

Analysis of the results in tables 2 and 3 suggests that there is no significant difference as regards bladder function in the three groups of patients.

A study of the chart shows the close similarity of the catheterization curves for the three groups.

19. At the Cedars of Lebanon Hospital the first postpartum day is defined as "the day following delivery."

The contention that early puerperal rising may cause excessive bleeding is disproved by the statistics, which actually show less frequent abnormal bleeding in the early group than in the late group, the intermediate group being approximately the same. Involution of the uterus was uniformly good in all groups.

The fear that early rising would cause a breakdown of episiotomy or abdominal wound incisions is likewise unfounded, only 1 instance of perineal skin separation occurring in the entire series, and this in a patient in the late rising group.

More efficient mobilization of the bowels is evident in table 4, over three times as many spontaneous bowel movements occurring in the early as in the late group.

The total number of complications in the entire series was very small, and there was no significant difference among the three groups. As there were no patients having emboli or thromboses in the entire series, the contention of many previous authors that late rising fosters these complications is not evident in our series. However, we are inclined to believe that study of a much larger series might possibly reveal a lower incidence of these complications in the early risers.

The claim advanced by some obstetricians that early rising may cause later prolapsus and retroversions is also disproved. Of early risers examined at one month and at six weeks, 28.7 per cent had either a midposition or retroversion of the uterus, while 34.6 per cent of the intermediate and 24.4 per cent of the late risers had the same positions—relatively similar totals. This indicates that early rising causes no significant alteration

in which they have noted less abdominal distention and discomfort and a much more rapid convalescence.

No patient in either the early or the intermediate group offered any criticism to us concerning early rising. On the contrary, the majority exhibited enthusiasm, particularly because they did not have to use bed

TABLE 5.—*Postpartum Studies*

374 Studied Post Partum at Four and Six Weeks *

	Early, 244		Intermediate, 104		Late, 226	
	No.	%	No.	%	No.	%
Excessive bleeding during first month.....	8	3.3	2	1.9	9	4.0
Perineal support:						
Good.....	244	100.0	104	100.0	226	100.0
Fair.....	0	0	0	0	0	0
Poor.....	0	0	0	0	0	0
Position of uterus:						
Anterior.....	174	71.3	68	65.4	171	75.6
Middle.....	27	11.0	7	6.7	8	3.6
Retrograde.....	43	17.7	29	27.9	47	20.8
Complications during first month:						
Severe backaches.....	2	0.8	2	1.0	7	3.0
Psychotic episodes.....	3	1.2	0	0	4	1.8
Osteomalacia.....	0	0	0	0	1	0.4

* A total of 8 patients did not present themselves for postpartum study.

pans. The multiparas especially were impressed, stating that they felt better and stronger than they had after previous confinements, when they had spent seven to fourteen days entirely in bed.

SUMMARY AND CONCLUSIONS

Our data indicate that delivered women can safely and advantageously get up early in the puerperium with no harmful results occurring.

Bowel function particularly is improved as a result of early rising in the puerperium.

Early puerperal rising reduces the amount of nursing care required.

The majority of patients managed in this way reported favorably on the method.

The statistics show no particular advantage to third or fourth day puerperal rising as compared to the earlier first and second day figures.

It is our opinion that early rising results in more rapid and comfortable convalescence, with less asthenia and less postoperative and postpartum depression.

It is our hope that this study will encourage further interest and continued observation on the question of early puerperal rising which may eventually clarify this still unsettled problem.

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TABLE 4.—*Miscellaneous Observations*

	Early, 247		Intermediate, 106		Late, 229	
	No.	%	No.	%	No.	%
Lochia:						
Normal.....	234	94.7	100	94.3	202	88.2
Moderate.....	11	4.5	6	5.7	24	10.4
Excessive.....	2	0.8	0	0	3	1.4
Perineal healing:						
Good.....	247	100.0	106	100.0	225	99.6
Fair.....	0	0	0	0	1*	0.4
Poor.....	0	0	0	0	0	0
Abdominal wound healing:						
Good.....	18	100.0	3	100.0	29	100.0
Fair.....	0	0	0	0	0	0
Poor.....	0	0	0	0	0	0
Involution of uterus:						
Good.....	244	98.8	102	96.2	228	99.6
Fair.....	3	1.2	4	3.8	1	0.4
Poor.....	0	0	0	0	0	0
Bowel function:						
.....	65	26.3	17	16.0	18	7.9
.....	182	73.7	89	84.0	201	92.1
Thrombosis.....	0	0	0	0	0	0
Embolism.....	0	0	0	0	0	0
All other complications:						
Mastitis.....	1	0.4	0	0	1	0.4
.....	1	0.4	0	0	0	0
.....	1	0.4	0	0	3	1.4
.....	1	0.4	0	0	0	0
Cystitis.....	0	0	1	0.9	1	0.4
Pyelitis.....	0	0	0	0	3	1.4
Parotitis.....	0	0	0	0	1	0.4

* Skin separation only.

in the position of the uterus, at least within a period of four to six weeks following delivery. Prolapsus did not occur in any patient in the entire series.

The nurses working in the obstetric department reported a decided reduction in the amount of nursing care required in patients rising early. They noted better morale and less discomfort in this group. Particularly favorable are their reports concerning cesarean sections,

Determination of Intoxication.—Blood reflects the concentration of alcohol in the brain more directly than does any other obtainable fluid. It has been a standard of reference in all scientific studies dealing with the amounts of alcohol in the body and the physiological effects from the alcohol. No particular difficulty is experienced in obtaining it, and there is no difficulty in the analytical determination of the alcohol. It is easily stored and easily transported. However, for blood, a physician is required to draw the sample and a trained technician to do the analysis. Over and above these requirements there are certain legal obstacles to the procurement of a blood sample. If it were not for these practical difficulties there is little doubt that all authorities would be in thorough accord on the use of blood as the material of choice in the determination of intoxication.—Greenberg, Leon A., in *Alcohol, Science and Society*, New Haven, Quarterly Journal of Studies on Alcohol, 1945.

ST. LOUIS ENCEPHALITIS

OCCURRENCE IN CHILDREN IN THE ST. LOUIS AREA
DURING NONEPIDEMIC YEARS 1939-1944

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ST. LOUIS

In the summer of 1933 an epidemic of acute encephalitis occurred in the St. Louis (Missouri) area. From August to November of that year there were 1,097 cases. A filtrable virus isolated from brain tissue of fatal cases was studied¹ extensively and was identified as the etiologic agent. In the summer of 1937 a second outbreak of acute encephalitis occurred in the St. Louis

to differentiate the types and establish the etiology with certainty. From the time of the 1937 epidemic, attempts have been made to ascertain by means of appropriate protection tests whether any of these cases of acute encephalitis was of the St. Louis type. Blood samples were obtained early in the course of the illness, at intervals throughout the hospital stay and at varying times after discharge from the hospital. The development during the clinical course of type specific antibodies to the St. Louis virus was studied by means of protection tests. In certain of the proved cases antibody studies were repeated on blood samples secured from one to three years after the acute attack.

Further efforts were made to differentiate the types of encephalitis by attempted isolation of an infectious agent directly from the spinal fluid. Accordingly, sam-

plasma. Accordingly, samples of freshly drawn spinal fluid were inoculated on the retracted chorioallantoic membrane of the developing hen's egg. If changes suggestive of viral growth were noted, usually in three to four days, membranes were triturated and were diluted with tryptose broth, and the supernatant fluid was inoculated intracerebrally into white Swiss mice. At the same time samples of spinal fluid were injected into white Swiss mice intracerebrally and intraperitoneally.

METHODS

Serum was withdrawn from blood samples under aseptic conditions and stored at a temperature of 4 C. St. Louis encephalitis stock virus (Hubbard strain) used for protection tests has been carried by intracerebral inoculation of white Swiss mice since its isolation at autopsy from human brain tissue. Repeated titration of the virus has shown that the minimal lethal dose for white Swiss mice remains between 10^{-8} and 10^{-9} .

MOUSE PROTECTION TESTS

Mouse protection tests, serum-virus neutralization, were used for the detection of antibody in the

serum of a patient and for the demonstration of increasing titer of antibody during the clinical course of the disease.

Serum-virus mixtures were prepared by adding two parts of the patient's serum to one part of appropriate dilution of virus and incubating for two hours in a water bath at 36.5 C. Controls consisted of similar serum-virus mixtures prepared with normal human serum and serum from a rabbit immunized against the St. Louis virus, Hubbard strain. After two hours' incubation these mixtures were inoculated, 0.03 cc. intracerebrally, into adult white Swiss mice. The chart gives the results of a mouse protection test showing rising antibody titer during the course of the illness. Such titer of type specific antibody to the St. Louis virus, increasing during the clinical course, was accepted as evidence that the encephalitis was due to the St. Louis virus.

Dilutions of Virus						Dilutions of Virus					
10 ⁻³		10 ⁻⁴		10 ⁻⁵		10 ⁻³		10 ⁻⁴		10 ⁻⁵	
Pt. P.B. Serum I 6 days after onset	4	4	6	6	6	6	Pt. C.B. Serum III 16 days after onset				
	4	4	7	7	6	6					
Serum III 15 days after onset	4	4	4	4			Pt. R.C. Serum II 2 days after onset	4	4	5	6
	4	4	5	5				4	4	6	6
Serum IV 19 days after onset							Serum IV 29 days after onset				
Pt. B.H. Serum I 8 days after onset	4	4	4	4	6	6	Normal Human Serum	4	4	5	6
	4	4	4	4	6	6		4	4	6	6
Serum II 11 days after onset	4	4	4	4			Immune Rabbit Serum				
	4	4	4	4							
Serum III 17 days after onset							Control Broth	4	4	4	4
								4	4	4	5
Pt. C.B. Serum I 7 days after onset	4	4	5	5	6	6	<div style="display: flex; justify-content: space-around; align-items: center;"> <div> - Survived </div> <div>T - Died trauma</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div> - Died in convulsions, figure within circle indicating day of death </div> </div>				
	4	4	5	5	5	6					

Results of mouse protection test, showing increase in antibody titer to St. Louis encephalitis virus. Titration of virus used in this test showed the minimum lethal dose to be between 10^{-5} and 10^{-6} .

area. There were 750 cases, and a virus isolated from human brain tissue taken at autopsy was found to be immunologically identical with the infectious agent isolated in 1933. The occurrence of sporadic cases of this disease since 1937 indicates the existence of an endemic focus, a fact of considerable importance from an epidemiologic point of view.

Each year patients are admitted to the St. Louis Children's Hospital with symptoms and signs of acute encephalitis. Clinically it is difficult, if not impossible,

From the Department of Pediatrics, Washington University School of Medicine, and the St. Louis Children's Hospital.

1. Report on the St. Louis Outbreak of Encephalitis, Pub Health Bull 214, United States Treasury Department, Public Health Service, January 1935. Muckenfuss, R. S.; Armstrong, C. and McCordock, H. A.: Encephalitis: Studies on Experimental Transmission, Pub Health Rep. 48: 1341-1343 (Nov. 3) 1933. Webster, L. T. and Irie, G. L.: A Virus Encountered in the Study of Material from Cases of Encephalitis in the St. Louis and Kansas City Epidemics of 1933, Science 78: 463-465 (Nov. 17) 1933.

TABLE 1.—Clinical Manifestations in Cases of Acute Encephalitis Shown to Be of St. Louis Type

Number	Year	Sex	Age, yrs.	Symptomatology	Physical Examination	Spinal Fluid			Protection Test *	
						Total Cells	Lymphocytes, per Cent	Pandy	Mouse	Egg
1	9/18/39 to 9/25/39	♂	9	History of tonsillitis, 1 week before admission Fever, 1 day Headache, 1 day	Temperature 39 C. Cervical rigidity	31	70	0	—	+
2	9/14/39 to 9/22/39	♂	9	Fever, 5 days Headache, 1 day Vomiting, 12 hours	Temperature 39 C. Cervical rigidity	100	100	0	+	+
3	5/14/40 to 5/20/40	♂	6	Headache, 4 days Fever, 3 days Drowsiness, 2 days Vomiting, 1 day Convulsions, mild, 18 hours	Temperature 39.5 C. Delirium, mild Slurred speech Cervical rigidity Kernig test positive Deep reflexes hyperactive Abdominal reflexes absent	200	92	+	+	+
4	10/30/42 to 11/9/42	♀	7	Headache, 5 days Vomiting, 5 days Fever, 5 days Stiff neck, 3 days Drowsiness, 2 days Dysphagia, 1 day Coma, 10 hours	Temperature 40 C. Comatose Cervical rigidity Opisthotonos Tremor Ocular nystagmus	65	100	+	+	—
5	8/26/42 to 9/10/42	♀	8	Headache and dizziness, 5 days Nausea, 5 days Fever, 5 days Malaise, 5 days Vomiting, 2 days Drowsiness, 2 days Stiff neck, 1 day	Temperature 40 C. Cervical rigidity Deep reflexes hyperactive Abdominal reflexes hyperactive	368	100	+	—	+
6	8/25/42 to 9/9/42	♀	8	Headache, 6 days Vomiting, 6 days Drowsiness, 4 days Leg pains for 2 days, 5 days before admission	Temperature 38 C. Cervical rigidity All deep reflexes hyporeactive Abdominals absent Pronounced drowsiness	468	100	0	—	+
7	10/1/43 to 10/6/43	♂	5	Anorexia, 3 days Headache, 2 days Pain in neck, 1 day Drowsiness, 1 day Fever, 1 day Vomiting, 12 hours	Temperature 40 C. Slight cervical rigidity Drowsiness Positive Kernig test	750	48	+	—	+
8	8/16/43 to 8/27/43	♂	7	Anorexia, 5 days Malaise, 4 days Drowsiness, 4 days Headache, 3 days Fever, 3 days	Temperature 40 C. Cervical rigidity Pronounced drowsiness Positive Babinski, bilateral Kernig test positive	277	98	+	+	+
9	7/12/44 to 7/25/44	♀	12	Anorexia, 6 days Fever, 6 days Malaise, 6 days Headache, 6 days Nausea, 6 days Drowsiness, 6 days Disorientation, 3 days Convulsions, 1 day	Temperature 40.5 C. Lethargic Disoriented Convulsions Cervical rigidity Papilledema, bilateral Kernig test negative Babinski, equivocal Deep reflexes hyporeactive	50	98	+	+	+
10	7/14/44 to 7/25/44	♀	6	Anorexia, 14 days Constipation, 9 days Intermittent fever, 8 days Muscular twitching, 5 days Vomiting, 4 days Leg pains, 2 days Headache, 2 days	Temperature 38.5 C. Pharyngitis, mild No neurologic findings except absent left upper abdominal reflex	90	60	—	+	+
11	7/24/44 to 7/30/44	♀	6	Anorexia, 6 days Headache, 6 days Otagia, right, 6 days Drowsiness, 6 days Pain in legs, 6 days Pain in legs, severe, 5 days Stiff neck, 4 days Vomiting, 2 days Fever, 3 days	Temperature 38 C. Lethargic Cervical rigidity Facial paralysis, left Abdominal reflexes absent	50	80	—	+	+
12	9/7/44 to 9/13/44	♂	9	Headache, 2 days Fever, 2 days Stiff neck, 1 day Delirium, 12 hours	Temperature 38 C. Disorientation Cervical rigidity Positive Brudzinski, left Mild pharyngitis	186	18	—	+	+

* protection: 0 = no protection.

All patients were of the white race and were considered to have recovered at time of discharge.

TABLE 2.—Distribution of Cases of Acute Encephalitis by Years and Months, 1938-1944

	January	February	March	April	May	June	July	August	September	October	November	December	Totals
1938.....	..	..	..	1	..	1	4	2	2	..	..	..	10
1939.....	..	..	..	..	..	..	..	..	(2)	..	..	..	(2)
1940.....	..	..	..	..	(1)	2	..	..	2	..	..	..	13 (1)
1941.....	..	1	1	2	..	1	2	3	2	..	..	..	12
1942.....	..	2	..	..	1	1	1	(2)	1	(1)	2	..	11 (2)
1943.....	1	1	..	..	4	3	..	3 (1)	2	1 (1)	1	..	14 (2)
1944.....	..	..	..	..	..	1	2 (3)	..	2 (1)	3	2	2	16 (4)
Totals.....	3	5	5	3	5 (1)	9	9 (3)	15 (3)	11 (3)	4 (2)	5	2	76 (12)

Figures in parentheses indicate the number of cases shown to be of St. Louis type.

EGG PROTECTION TESTS

In each instance the results of the mouse protection tests were confirmed by means of egg protection tests. The egg protection test² furnishes a relatively simple and inexpensive method for detecting the presence of humoral antibodies and may be carried out by either of two procedures: (1) serum-virus neutralization or (2) protection by passive transfer. In the former, chorioallantoic inoculations consisted of 0.1 cc. of the serum-virus mixtures described. Such inoculated eggs were allowed to continue development for ninety-six hours following inoculation, after which the membranes were stained with trypan blue.³ The degree of neutralization by a given serum sample is indicated by the reduction or absence of virus growth on the chorioallantois. Control membranes were inoculated with comparable mixtures of virus with normal human serum and with immune rabbit serum.

TABLE 3.—Distribution of Cases of Acute Encephalitis According to Location and Year, 1939-1944, St. Louis Children's Hospital

Cases Proved to Be St. Louis Type							
Years	1939	1940	1941	1942	1943	1944	Totals
St. Louis City.			..	.		.	..
St. Louis County	2		..	2	1	1	7
Missouri, ...	..	..	..		1	1	2
Illinois	..	..		1	..	2	5
Totals	<u>3</u>		..	<u>3</u>	<u>2</u>	<u>4</u>	12

Cases Not of St. Louis Type							
Years	1939	1940	1941	1942	1943	1944	Totals
St. Louis City ..	5		8	7	6	4	30
St. Louis County	5		2	..	3	5	13
Missouri	..		1	2	2	2	10
Illinois	1		2	2	1	6	11
Iowa	1		..	..	..		1
Louisiana	..		..	..	1	.	1
Totals . .	<u>16</u>		<u>13</u>	<u>11</u>	<u>13</u>	<u>16</u>	66

The passive transfer method consists in the passive protection of living cells by immune serum prior to inoculation with virus. Cells of the chorioallantois on contact with specific immune serum are rendered immune⁴ to the corresponding virus, and on subsequent exposure virus growth is prevented. Serum was applied to the chorioallantois by means of an atomizer, 0.3 cc. of serum being distributed over the entire surface of the retracted membrane. Twenty-four hours after being sprayed with serum these membranes were inoculated with 0.1 cc. of virus suspension in serial dilution. Membranes sprayed with normal human serum and membranes sprayed with immune rabbit serum served as controls in each instance.

2 Blattner, R. J., and Cooke, J. V. The Use of the Egg Protection Test for the Recognition of St. Louis Encephalitis in Man, *J. Infect. Dis.* 70: 226-230 (May-June) 1942. Blattner, R. J., Heys, F. M., and Gollub, S. W.. Antibody Response to Cutaneous Inoculation with Vaccinal Virus in Human Subjects, Utilizing the Egg Technique I. Serum Virus Neutralization; II. Protection by Passive Transfer, *J. Immunol.* 46: 207-215 (April) 1943.

3 Cooke, J. V., and Blattner, R. J. Trypan Blue Vital Staining in Studies of Virus Lesions on Chorioallantoic Membranes, *Am. J. Path.* 18: 163-167 (Jan.) 1942.

4 Blattner and Cooke.² Cooke and Blattner.²

5 Smith, M. G., Lennette, E. H., and Blattner, R. J. Etiologic Studies of Sporadic Cases of Encephalitis Occurring in the St. Louis Area in 1938, *Am. J. Dis. Child.* 59: 509-514 (March) 1940.

Serum-virus neutralization and passive transfer methods gave similar results, and both confirmed those obtained by mouse protection tests.

RESULTS

In 1938 Smith, Lennette and Blattner⁵ reported 10 cases of acute encephalitis studied by mouse protection tests. None of these showed development of type specific antibody to the St. Louis virus.

From 1939 to 1944 inclusive 66 cases of acute encephalitis have been observed in St. Louis Children's Hospital and have been investigated for the development of type specific antibody to the St. Louis virus. Twelve of the 66 cases (18 per cent) showed increasing antibody titer to the St. Louis virus. The clinical findings of these 12 cases are summarized in table 1. Distribution of cases by years and months is presented in table 2. Ten cases reported by Smith, Lennette and Blattner in 1938 are included, bringing the total number of cases to 88.

It will be seen that approximately 74 per cent (65) of all the cases of acute encephalitis occurred in the period from May to October, inclusive; of the cases shown by increasing antibody titer to be St. Louis type, 100 per cent (all 12) occurred in May to October inclusive; 75 per cent of these 12 (9 cases) occurred within the three months period July, August and September.

In 2 of the proved cases of St. Louis type, blood samples obtained two and three years after acute illness showed high titer of antibody.

Table 3 gives the approximate geographic location of cases of acute encephalitis and their distribution by years. It will be noted that no case of the St. Louis type occurred in the city itself, whereas 30 cases which were shown not to be of the St. Louis type did occur in the city proper.

In no instance was the virus of St. Louis encephalitis isolated from spinal fluid either by egg or by mouse inoculation. In 1 case of acute encephalitis occurring in September 1944 the virus of lymphocytic choriomeningitis was recovered from the spinal fluid, and in another, occurring in January 1943, herpes simplex virus was isolated.

COMMENT

The occurrence of sporadic cases of St. Louis encephalitis in nonepidemic years in a district where two epidemics of this disease have occurred previously indicates the persistence of the infectious agent in the area. The fact that all these sporadic cases occurred during the warm months serves to reemphasize the seasonal distribution which was a striking feature of the disease during the epidemics of 1933 and 1937. It is of further interest that a significant number of the sporadic cases has occurred in districts where high per capita incidence was recorded during the epidemics.

While there has been considerable discussion relative to possible case to case transmission by droplet infection, it is significant that, despite numerous attempts, the virus has never been isolated from nasopharyngeal washings and that evidence for direct case to case transmission is lacking. As has been pointed out in a previous publication,⁶ certain epidemiologic features of the disease suggest the possibility that blood sucking vectors may be important factors in its transmission.

6 Blattner, R. J., and Heys, F. M. Blood Sucking Vectors of Encephalitis: Experimental Transmission of St. Louis Encephalitis (Huhard Strain) to White Swiss Mice by the American Dog Tick *Dermacentor Variabilis* Say, *J. Exper. Med.* 79: 439-454 (April) 1944.

Experimental work,⁷ with an arthropod, the American dog tick *Dermacentor variabilis*, showed for the first time that the St. Louis virus can be transmitted to susceptible animals by the bite of such a vector and that the virus is passed by the infected female tick through her eggs and through all stages of subsequent development. Transovarian passage of the virus was followed into the third generation.

Hammon and his associates⁸ demonstrated the presence of the St. Louis virus in mosquitoes (*Culex tarsalis*) collected in nature during epidemic periods and showed experimentally that the virus can be transmitted by the bite of culicine mosquitoes. However, persistence of the virus indefinitely in the mosquito has not been established.

More recently the presence of the St. Louis virus⁹ has been demonstrated in the bodies of chicken mites (*Dermanyssus gallinae*) collected in nature from three separate localities in St. Louis County during nonepidemic years. These findings might serve to account for the existence of an endemic focus of the infectious agent of St. Louis encephalitis and the occurrence of sporadic cases of this disease in nonepidemic years. Details of epidemiology must await further field and experimental study.

SUMMARY

During the years 1939-1944 inclusive 66 cases of acute encephalitis were studied at the St. Louis Children's Hospital. Twelve were shown to be of the St. Louis type.

All 12 of these cases of St. Louis encephalitis occurred during the months May to October; 9 of the twelve occurred during July, August and September. The occurrence of sporadic cases in the St. Louis area indicates the existence of an endemic focus. Recent advances in the epidemiology of this disease suggest a possible explanation for the persistence of such an endemic focus.

St. Louis encephalitis virus was not recovered from spinal fluid. However, during the course of these investigations the virus of lymphocytic choriomeningitis was recovered from spinal fluid in 1 instance, herpes simplex in another instance.

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PRACTICAL ASPECTS OF PEPTIC ULCER MANAGEMENT UNDER SER- VICE CONDITIONS

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Our purpose in this report is to present the results of an investigation of 82 consecutive cases of peptic ulcer among Naval and Marine Corps personnel, to review factors leading to disability and to formulate principles of diagnosis, management and disposition of military personnel having this condition. To the best of our knowledge no similar report relative to Naval personnel has been published. Because of the increasing prevalence of peptic ulcer among both civilians and military personnel in many of the principal countries at war,¹ a review of recent developments in this field seems justified.

The problems that beset the physician in civilian life in the diagnosis and management of peptic ulcer are well known. In military practice, however, additional factors tend to increase these difficulties. Any consideration of a patient in service must of necessity concern itself primarily with the disposition of the individual in respect to his ability to perform military duties. Particularly the Marine, by the nature of the service expected from him, must be one whose gastrointestinal tract can function well under stress and unusually arduous conditions of subsistence and diet.

GENERAL CONSIDERATIONS

The increasing importance of dyspepsia and particularly peptic ulcer as causes of disability in both civilian and military life has been stressed in many recent reports from England,² Canada,³ Germany⁴ and the United States.⁵ In England the incidence proved high during heavy air raid periods and in forces having military reverses. In Germany, disability was prevalent in war workers and in military personnel before or immediately after going into front lines. In the United States the greatest increase in incidence of these disorders is noted in civilians⁶ and in the Army. Hurst⁷ concluded that "dyspepsia was the largest single disease in the British army, and the most important medical problem of this war."

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ogy and Proctology.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writers and are not to be considered as reflecting the policies of the Navy Department.

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Peptic ulcer constitutes an important problem in the armed forces because experience in all military services has shown that in general patients with this condition are unfit for service and that a large proportion of these patients had the condition prior to enlistment.⁸ The reported incidence of peptic ulcer among all gastrointestinal diseases is variable. In England it is reported as from 35 to 58 per cent,⁹ in Canadian soldiers invalided home 21 per cent,¹⁰ in United States Army hospitals from 7.2 per cent to 43 per cent,¹¹ in a South Pacific combat zone hospital 19 per cent. In England it has been estimated that 90 per cent of the patients had the condition before enlistment,¹² in the United States the reported incidence is from 50 to 93 per cent.¹³ Duodenal ulcer is far more prevalent than gastric ulcer. The ratio of gastric to duodenal ulcers in the British army is reported as 1:3.6;¹² in the Army hospitals of the United States it varies from 1:8 to 1:49.¹⁴ In Naval personnel the proportion was 1:9.¹⁵

ETIOLOGIC FACTORS

The cause of peptic ulcer is uncertain notwithstanding extensive physiologic, psychiatric and experimental studies.¹⁶ Important contributing factors are conceded to be the excessive secretion of gastric hydrochloric acid and pepsin as well as gastric hypersecretion and hypermotility. All these conditions have resulted from excessive and at times prolonged stimulation of the vagus nerve, either from neurogenic or from psychogenic causes.¹⁷ The same vagus stimulation has been found to produce circulatory changes in the gastric mucosa consisting of anoxia, increased capillary permeability, tissue edema and decreased circulating blood volume.¹⁸ With the physiologic changes described, peptic ulcers have been observed and produced repeatedly.

Psychosomatic medicine has made a great contribution to the practical understanding and management of peptic ulcer by demonstrating the important part that emotional disturbances can play in the formation and

recurrence of peptic ulcer.¹⁹ That the physiologic disturbances described which are associated with peptic ulcer can result from emotional disturbances has been demonstrated by Wolf and Wolff¹⁸ in a laboratory assistant having a permanent gastrostomy opening. Repeated observations in this individual indicated that feelings of hostility, anger or resentment resulted in vigorous contractions of the stomach, a sharp increase in gastric acidity and secretion, and a turgid hyperemic gastric mucosa typical of hypertrophic gastritis. This state was found to be associated with symptoms of pain and heartburn. The turgid mucosa furthermore proved to be abnormally susceptible to injury, ulceration and hemorrhage and to be hypersensitive to direct stimulation.

Palmer²⁰ has contributed a valuable psychosomatic analysis of the factors in the formation of peptic ulcer. He states that heredity and dietary factors, as well as psychosomatic relationships, must be taken into consideration in the study and management of patients with peptic ulcer. The hereditary contribution, frequently overlooked, is that the ulcer patient has a physique which limits his behavior to a certain percentage of his aspirations, which are usually excessively high. The intolerance of these patients to certain types of food is well known. The psychosomatic relationships are primarily concerned with the higher centers and the stomach, which acts in two capacities. One is concerned with its reflex response to foods. The other function is as "an effector unit in the total behavior pattern," in which the stomach responds to psychic stimuli by muscle contraction and gland secretion.

A practical application of the principles described by Palmer is furnished in a psychiatric and physiologic study by Mittelman, Wolff and Scharf²¹ in a series of 30 patients with peptic ulcer. All these patients appeared to be successful and without nervous disorders or life problems. Actually, all proved to have backgrounds of anxiety, insecurity, resentment and hostility. Under usual conditions of living they were relatively comfortable and effective. However, under unusual conditions of stress or disturbing situations produced experimentally, feelings of insecurity and anxiety occurred. These emotional disturbances were almost always associated with an increase in gastric acidity and pepsin secretion. Gastric peristaltic action was greatly increased and frequently pain and sometimes hemorrhage occurred. These investigators conclude that the emotional disturbances and functional changes in the stomach are not cause and effect but "coincident aspects of biologic behavior in reaction to life situations, behavior in some cases being compatible with health, in others resulting in disease."

The importance of these investigations in the diagnosis and treatment of service personnel is evident. Assuming that the so-called "ulcer diathesis" is the unstable type of individual described, the effect under adverse conditions of new situations, new diets (especially K rations) and environmental changes of a military nature may well be reflected in the disability of the

8 Graham, J. G., and Kerr, J. D. O. Digestive Disorders in the Forces, *Brit. M. J.* 1: 473 (March 29) 1941. Payne, R. T., and Newman, C. Interim Report on Dyspepsia in the Army, *ibid.* 2: 819 (Dec. 14) 1940. Tidy, I.

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19 Weiss, E., and English, O. S. Psychosomatic Medicine, Philadelphia, W. B. Saunders Company, 1943. Kennedy, F. Functional Nervous Disorders Associated with Warfare, *New York State J. Med.* 42: 425 (March 1) 1942.

20 Palmer, D. Psychosomatic Considerations in Peptic Ulcer, *Ohio State M. J.* 35: 717 (July) 1939.

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patient. That the civilian can frequently accommodate himself to circumstances of his own making indefinitely but may quickly break down in service is shown by Tidy's comparative studies of civilian and military personnel with peptic ulcer in England.¹²

CLASSIFICATION

Our study is based on a consecutive series of patients with peptic ulcer admitted to the gastroenterologic ward of a large Naval hospital from Nov. 1, 1944 to March 28, 1945. During this time 5,379 patients were admitted to the hospital, of whom 238, or 4 per cent, had disease of the gastrointestinal tract. Of the latter number 82 have been proved cases of duodenal or stomach ulcers, or 35 per cent of all gastrointestinal diseases. Of these, 72 were duodenal and 10 gastric, the ratio of gastric to duodenal ulcers being 1:7. We have further subdivided these groups into those which were service incurred and those in which there was definite evidence that the illness had its onset prior to entry into service.

Duodenal Ulcer.—Service Incurred: Forty of our total of 72 duodenal ulcers, or 55 per cent, were incurred since the patients' enlistment (table 1). An analysis of the statistics reveals the average age in this group to be 28 years and the average duration of symptoms one year and ten months. The average time elapsing between enlistment and the onset of symptoms was two years. Thirty-nine of the 40 patients gave a history of pain and 36 had a typical pain food-relief-syndrome. Twenty-six had nausea or vomiting or both. Hyperacidity was present in only 14, and 15 either gave a history of hematemesis or had at some time had positive laboratory findings of occult blood in the stool. Positive x-ray evidence of activity or residual deformity was found in 39 cases.

Not Service Incurred: Of the 72 cases of duodenal ulcer, there were 32 cases, or 45 per cent, in which there was definite evidence that the condition antedated service (table 1). The average age of this group is 28 and the average duration of symptoms six and one-half years. The average time between enlistment and recurrence of symptoms was six months. Thirty-one of the 32 patients had epigastric pain and 28 gave a history of typical food relationship. Nausea or vomiting has been present in 22 cases. Hyperacidity was found in 14 of the 32 cases and evidence of bleeding in 16. The x-ray diagnosis was positive in all of this group.

Stomach Ulcer.—Service Incurred: Of the 10 stomach ulcers, 6 were incurred in service. The youngest patient was 20 and the oldest 28, and the average duration of symptoms was thirteen months. Five of this group gave a history of pain, 4 of a typical food relationship and 4 of nausea and vomiting. Four had hyperacidity, whereas 3 had evidence of bleeding. Two of these patients had negative x-ray findings; the diagnosis in 1 case was made on the finding of a large prepyloric ulcer during the course of a cholecystectomy for cholelithiasis, and in the second case the diagnosis was based on a classic history and two episodes of severe hemorrhage, for which no other demonstrable cause was found.

Not Service Incurred: In the remaining 4 cases ulcer existed prior to enlistment. The youngest was 19 and the oldest 26, and the average duration of symptoms was five years. All 4 patients had pain, 3 food relationship and 2 nausea or vomiting. Only 1 had hyperacidity, and 2 had evidence of bleeding. All had positive x-ray findings.

The number of stomach ulcers is too small from which to draw any definite conclusions, but of the patients with histories of ulcer antedating service all had shorter intervals of quiescence between enlistment and recurrence than the interval between enlistment and onset of symptoms in the service incurred cases.

DIAGNOSTIC CRITERIA

The important diagnostic criteria are a history of pain, the classic pain-food-relief syndrome and associated nausea or vomiting. Chronicity and periodicity are features that can be elicited frequently. Physical examination is rarely of significance, although many of these patients have a spastic, tender sigmoid. Hyperacidity and hypersecretion are always suggestive, and any evidences of bleeding demands the most careful consideration. Finally, the most conclusive finding is made by x-ray studies.

In the entire series only 3 gave no history of pain, and 2 of these were cases in which the presenting symptom was either hematemesis or tarry stools. Seventy-

TABLE 1.—An Analysis of the Histories and Findings in the Series of 82 Patients Having Peptic Ulcer

	Num-ber of Cases	Average Age	Average Duration of Sym-poms	Number of Patients Having					
				Pain	Food Relation	Nausea or Vomiting	Hyper-acidity	Evi-dence of Bleed-ing	Posi-tive X-ray Find-ings
Duodenal Ulcer									
Service incurred	40	28 (20-46)	22 mo. (6 wk. to 8 yr.)	39	36	26	14	15	39
Not service incurred	32	28 (18-49)	6½ yr. (2 yr. to 17 yr.)	31	28	22	14	16	32
Totals	72			70	64	48	28	31	71
Stomach Ulcer									
Service incurred	6	25 (20-28)	13 mo. (1 mo. to 2½ yr.)	5	4	4	4	3	4
Not service incurred	4	22 (19-26)	5 yr. (2½ yr. to 7 yr.)	4	3	2	1	2	4
Totals	10			9	7	6	5	5	8

one of the 82 patients were relieved of pain by the ingestion of bland foods. These predominant symptoms, pain and food relief, and particularly bleeding, frequently justify a diagnosis of ulcer, notwithstanding negative x-rays. Corroborative evidence is added by the finding of hyperacidity and (or) hypersecretion, but our observation is that under service conditions such findings are relatively infrequent. We consider gastric contents with over 30 degrees free hydrochloric acid on a fasting stomach or over 40 degrees free hydrochloric acid after a bread test meal to be definitely hyperacid. Hyperacidity was present in 28 of the 72 cases of duodenal ulcer and in 5 of the 10 cases of gastric ulcer. Hypersecretion was present in very few instances.

It will be noted that in only 3 of our patients was there absence of x-ray evidence of ulcer. Such evidence is the finding of a persistent niche with crater, or constant deformity. Frequently in cases presenting vague, atypical histories and with no laboratory findings indicative of ulcer the diagnosis has been based solely on the findings of the roentgenologist. Therefore we feel that despite our best efforts there unquestionably have been some patients whom we have returned to duty with existing but unproved organic lesions.

Peptic ulcer constitutes an important problem in the armed forces because experience in all military services has shown that in general patients with this condition are unfit for service and that a large proportion of these patients had the condition prior to enlistment.⁸ The reported incidence of peptic ulcer among all gastrointestinal diseases is variable. In England it is reported as from 35 to 58 per cent,⁹ in Canadian soldiers inactivated home 21 per cent,¹⁰ in United States Army hospitals from 7.2 per cent to 43 per cent,¹¹ in a South Pacific combat zone hospital 19 per cent. In England it has been estimated that 90 per cent of the patients had the condition before enlistment,¹² in the United States the reported incidence is from 50 to 93 per cent.¹³ Duodenal ulcer is far more prevalent than gastric ulcer. The ratio of gastric to duodenal ulcers in the British army is reported as 1:3.6;¹² in the Army hospitals of the United States it varies from 1:8 to 1:49.¹⁴ In Naval personnel the proportion was 1:9.¹⁵

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14 Zetzel, L. Experiences with Peptic Ulcer in an Army Station Hospital, *Gastroenterology* 3: 472 (Dec.) 1944.

15 Walters, W., and Butt, H. R. Management of Ulcers Among Naval Personnel, *Ann. Surg.* 115: 489 (Oct.) 1943.

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20 Palmer, D. Psychosomatic Considerations in Peptic Ulcer, *Ohio State M. J.* 35: 717 (July) 1939.

21 Mittelman, Bela; Wolff, H. G., and Scharf, Margaret D. Emotions and Gastrointestinal Function. Experimental Studies on Patients with Gastritis, Duodenitis and Peptic Ulcer, *Psychosom. Med.* 4: 5 (Jan.) 1942.

patient. That the civilian can frequently accommodate himself to circumstances of his own making indefinitely but may quickly break down in service is shown by Tidy's comparative studies of civilian and military personnel with peptic ulcer in England.¹²

CLASSIFICATION

Our study is based on a consecutive series of patients with peptic ulcer admitted to the gastroenterologic ward of a large Naval hospital from Nov. 1, 1944 to March 28, 1945. During this time 5,379 patients were admitted to the hospital, of whom 238, or 4 per cent, had disease of the gastrointestinal tract. Of the latter number 82 have been proved cases of duodenal or stomach ulcers, or 35 per cent of all gastrointestinal diseases. Of these, 72 were duodenal and 10 gastric, the ratio of gastric to duodenal ulcers being 1:7. We have further subdivided these groups into those which were service incurred and those in which there was definite evidence that the illness had its onset prior to entry into service.

Duodenal Ulcer.—Service Incurred: Forty of our total of 72 duodenal ulcers, or 55 per cent, were incurred since the patients' enlistment (table 1). An analysis of the statistics reveals the average age in this group to be 28 years and the average duration of symptoms one year and ten months. The average time elapsing between enlistment and the onset of symptoms was two years. Thirty-nine of the 40 patients gave a history of pain and 36 had a typical pain food-relief-syndrome. Twenty-six had nausea or vomiting or both. Hyperacidity was present in only 14, and 15 either gave a history of hematemesis or had at some time had positive laboratory findings of occult blood in the stool. Positive x-ray evidence of activity or residual deformity was found in 39 cases.

Not Service Incurred: Of the 72 cases of duodenal ulcer, there were 32 cases, or 45 per cent, in which there was definite evidence that the condition antedated service (table 1). The average age of this group is 28 and the average duration of symptoms six and one-half years. The average time between enlistment and recurrence of symptoms was six months. Thirty-one of the 32 patients had epigastric pain and 28 gave a history of typical food relationship. Nausea or vomiting has been present in 22 cases. Hyperacidity was found in 14 of the 32 cases and evidence of bleeding in 16. The x-ray diagnosis was positive in all of this group.

Stomach Ulcer.—Service Incurred: Of the 10 stomach ulcers, 6 were incurred in service. The youngest patient was 20 and the oldest 28, and the average duration of symptoms was thirteen months. Five of this group gave a history of pain, 4 of a typical food relationship and 4 of nausea and vomiting. Four had hyperacidity, whereas 3 had evidence of bleeding. Two of these patients had negative x-ray findings; the diagnosis in 1 case was made on the finding of a large prepyloric ulcer during the course of a cholecystectomy for cholelithiasis, and in the second case the diagnosis was based on a classic history and two episodes of severe hemorrhage, for which no other demonstrable cause was found.

Not Service Incurred: In the remaining 4 cases ulcer existed prior to enlistment. The youngest was 19 and the oldest 26, and the average duration of symptoms was five years. All 4 patients had pain, 3 food relationship and 2 nausea or vomiting. Only 1 had hyperacidity, and 2 had evidence of bleeding. All had positive x-ray findings.

The number of stomach ulcers is too small from which to draw any definite conclusions, but of the patients with histories of ulcer antedating service all had shorter intervals of quiescence between enlistment and recurrence than the interval between enlistment and onset of symptoms in the service incurred cases.

DIAGNOSTIC CRITERIA

The important diagnostic criteria are a history of pain, the classic pain-food-relief syndrome and associated nausea or vomiting. Chronicity and periodicity are features that can be elicited frequently. Physical examination is rarely of significance, although many of these patients have a spastic, tender sigmoid. Hyperacidity and hypersecretion are always suggestive, and any evidences of bleeding demands the most careful consideration. Finally, the most conclusive finding is made by x-ray studies.

In the entire series only 3 gave no history of pain, and 2 of these were cases in which the presenting symptom was either hematemesis or tarry stools. Seventy-

TABLE 1.—An Analysis of the Histories and Findings in the Series of 82 Patients Having Peptic Ulcer

	Number of Cases	Average Age	Average Duration of Symptoms	Number of Patients Having					
				Pain	Food Relation	Nausea or Vomiting	Hyper-acidity	Evidence of Bleeding	Positive X-ray Findings
Duodenal Ulcer									
Service incurred	40	28 (20-46)	22 mo. (6 wk. to 8 yr.)	39	56	26	14	15	39
Not service incurred	32	28 (18-49)	6½ yr. (2½ yr. to 17 yr.)	31	28	22	14	16	32
Totals	72			70	64	48	28	31	71
Stomach Ulcer									
Service incurred	6	25 (20-28)	13 mo. (1 mo. to 2½ yr.)	5	4	4	4	3	4
Not service incurred	4	22 (19-26)	5 yr. (2½ yr. to 7 yr.)	4	3	2	1	2	4
Totals	10			9	7	6	5	5	8

one of the 82 patients were relieved of pain by the ingestion of bland foods. These predominant symptoms, pain and food relief, and particularly bleeding, frequently justify a diagnosis of ulcer, notwithstanding negative x-rays. Corroborative evidence is added by the finding of hyperacidity and (or) hypersecretion, but our observation is that under service conditions such findings are relatively infrequent. We consider gastric contents with over 30 degrees free hydrochloric acid on a fasting stomach or over 40 degrees free hydrochloric acid after a bread test meal to be definitely hyperacid. Hyperacidity was present in 28 of the 72 cases of duodenal ulcer and in 5 of the 10 cases of gastric ulcer. Hypersecretion was present in very few instances.

It will be noted that in only 3 of our patients was there absence of x-ray evidence of ulcer. Such evidence is the finding of a persistent niche with crater, or constant deformity. Frequently in cases presenting vague, atypical histories and with no laboratory findings indicative of ulcer the diagnosis has been based solely on the findings of the roentgenologist. Therefore we feel that despite our best efforts there unquestionably have been some patients whom we have returned to duty with existing but unproved organic lesions.

TREATMENT

The treatment shall be described in slight detail, since we believe that the general pattern is followed with little variation in the majority of institutions. The general principles have been described by Winkelstein²² and Aaron.²³

All patients admitted with an established diagnosis, or in whom the existence of ulcer is strongly suspected, are put on complete bed rest with only bathroom privileges, a diet of milk and cream every two hours, medication consisting of Amphojel or other antacid medication, belladonna, mild sedation and supplementary vitamins. Bed rest is continued for a two week period. The diet is increased each week until at the end of three or four weeks patients are taking a full modified type of Sippy diet. Medication and smoking restriction are continued throughout the course of treatment.

The length of time for treatment and modifications of the routine vary according to the individual response. The degree of improvement is estimated on the basis of the amelioration of subjective symptoms and the findings of an x-ray study performed six weeks following the original x-ray. Whereas in some cases it may be

TABLE 2.—Summary of the Disposition of
82 Cases of Peptic Ulcer

	Number	Full Duty	Limited Duty	Discharged
Duodenal Ulcer				
<i>Service Incurred:</i>				
Marines.....	32	0	5	27
Naval.....	8	0	5	3
Totals.....	40	0	10	30
<i>Not service Incurred:</i>				
Marines.....	23	0	0	23
Naval.....	9	0	2	7
Totals.....	32	0	2	30
Stomach Ulcer				
Service Incurred.....	6	0	4	2
Not service Incurred.....	4	0	0	4
Totals.....	10	0	4	6

necessary to prolong the period of definite dietary restriction or bed rest, nevertheless the majority of patients show evidence of rapid improvement and at the end of two or three weeks complain only of vague and occasional epigastric distress. Outside "liberty" with its temptations to dietary and other indiscretions is not granted until the patient is free from symptoms. Medical treatment is continued until the patient is able to tolerate a full Sippy diet without medication, a regular diet with certain restrictions as related to foods which the individual finds he does not tolerate well, or until it is established that there exist certain indications for operative intervention.

As concerns operative treatment, we are in accord with the writings of Lahey.²⁴ At the writing of this report one of us has performed subtotal gastrectomies on 4 patients in this series. Three were duodenal ulcers, in 2 of which there was almost a complete lack of response to medical treatment after a month of rigid routine, the third case having been one in which two severe episodes of intestinal bleeding had occurred and

in which an interval operation was performed. In the fourth case, a large prepyloric crater was found during the course of a cholecystectomy, and a resection was performed. The type of operation is modeled after that described by Hofmeister, and we prefer the antecolic, long loop anastomosis. All 4 patients made uneventful operative recoveries, but it is too early at this date to estimate the ultimate results. We should like to substantiate the findings of other surgeons who have found that early mobility greatly aids in the immediate postoperative period. Our patients are permitted and encouraged to move about after the effects of the anesthesia have subsided. They are given bathroom privileges at once and by the third postoperative day are able to walk about freely with but little discomfort.

It is important at this time to mention a factor in the treatment of ulcer patients that is of the greatest value, namely the control of exciting emotional factors. We have found the most striking evidence of this in patients in whom for one reason or another there has been a failure to make a diagnosis. Such patients are sometimes told that they have "nervous stomachs," are "unstable" or just have "nothing the matter with them." The improvement invariably is most noticeable and pronounced, once the patient discovers that he has some tangible disease which is expected to respond to treatment.

The individuals coming under our observation have varied in age between 18 and 46. They have been white and black, tall and short, fat and thin, nervous and phlegmatic. There is no common physical habitus, but the one common denominator is an unstable or maladjusted psychogenic and physiologic background. Marital difficulties, money matters, uncertainty as to ultimate disposition are only a few of the great number of problems that make so difficult the treatment of such patients. We have made as great an attempt as our ability and time permit to try to understand the individual and to be of assistance to him in allaying the exciting psychic factors.

RESULTS OF TREATMENT AND DISPOSITION

The results of treatment are interpreted primarily by clinical response and x-ray findings. We have had occasion to make follow-up x-ray studies in 46 instances. These studies, made at the end of six weeks of treatment, revealed no evidence of any organic lesion in 20 cases, a lessening in the size of the crater in 10, residual deformity but no crater in 8 and demonstrated no change in 8. It has been observed in a number of our cases that the clinical improvement is not proportionate to the findings of repeated x-ray examination; some patients who are symptom free still having positive x-ray findings, and others with a negative x-ray interpretation still complain of clearcut subjective symptoms. We classify our clinical results in accordance with the patient's ability to tolerate various levels of diet.

Of 40 patients with service incurred duodenal ulcer under treatment for six weeks, 26 were able to tolerate a full Sippy diet without medication and without discomfort, 3 were partaking of a regular hospital diet without complaints, 9 have shown slight improvement and 2 showed no improvement. Thirty-two of these 40 patients were Marine personnel. Of those, 26 have been discharged from service and 3 were returned to "limited duty." (This term means duty limited to the continent of the United States.) There were in this

22. Winkelstein, A.: The Modern Treatment of Peptic Ulcer, Bull. New York Acad. Med. 20:87 (Feb.) 1944.

23. Aaron, A. H.: Inflammatory Lesions of the Upper Gastrointestinal Tract, J. A. M. A. 127:1027 (April 21) 1945.

24. Lahey, F. H.: Inflammatory Lesions of the Stomach and Duodenum, J. A. M. A. 127:1030 (April 21) 1945.

group 3 with subtotal resections, 2 of whom were returned to limited duty, the other having been discharged from service. Naval personnel in this classification numbered 8. Three have been discharged from service, 5 were returned to "limited duty," 1 having had a gastroenterostomy performed. In the latter instance a partial gastrectomy was deemed inadvisable because of the extensive inflammatory reaction surrounding the lesion (table 2).

Of 32 patients with duodenal ulcer incurred prior to enlistment, 11 showed slight improvement and the remainder were able to tolerate a full Sippy diet. Practically none, however, were able to tolerate a regular hospital diet, which is the one primary prerequisite for return to duty. Of these 32 patients 23 were Marines, all of whom were discharged from service. Of the 9 Naval personnel, 7 were discharged from service and 2 were returned to limited duty.

In 6 of the 10 patients with stomach ulcer the ulcer was service incurred. Of these, 2 had been operated on for perforation prior to their admission to this hospital and were discharged from service able to tolerate a full Sippy diet. One patient was operated on at this hospital for cholelithiasis, and during the operation a large prepyloric crater was found and a subtotal resection was performed. This patient has returned to limited duty. The remaining 2 patients were discharged from service, 1 as slightly and the second as much improved.

In the remaining 4 patients with stomach ulcer the ulcer was not service incurred. All 4 have been discharged from service having shown considerable improvement under medical treatment, although in 2 of these cases, in spite of normal gastric analyses and gastrointestinal x-ray studies, there were still present mild subjective complaints on a moderately restricted diet.

A further breakdown of our statistics shows that there have been 63 Marines and 19 Naval personnel in this series. Of the 63 Marines, 57 have been released from service and 6 retained. Of the 19 Naval personnel, 12 have been discharged and 7 retained. These figures reflect quite accurately our estimates as to the different character of duty required by these two branches of service.

It also will be noted that in the 82 patients with peptic ulcer the ulcers of 46 were service incurred. Thirty-five of these have been released from service and 11 have returned to limited duty. Among the 36 patients with ulcer not service incurred, only 2 have returned to duty whereas the remainder have been discharged. Thus we see the somewhat less favorable response to treatment in those cases in which the symptoms are of longer duration.

There remains to discuss the contributory effects of service conditions to the incidence of ulcer. Among the patients with duodenal ulcer the average length of time between enlistment and onset of symptoms in patients having had duodenal ulcer prior to enlistment was approximately six months, whereas in those having ulcers incurred in line of duty the average period between enlistment and disability was two years. Few of our patients had reached combat areas and rarely was the onset of symptoms related to such conditions. However, field conditions and particularly field "chow" frequently precipitated digestive symptoms. The con-

clusions which seem justified by these facts are that the psychogenic constitutional states of these individuals, together with problems of military service and the attendant physiologic disturbances, are the essential factors in the production of their ulcers. We further feel justified in stating that the attendant emotional and physical stress placed on many of these already unstable and (or) maladjusted individuals has caused an earlier incidence of symptoms than might have been the case during the uninterrupted course of an adjusted civil life.

Finally, as a result of our experience we are convinced that any individual with a history of ulcer should not be admitted to service. The short period of time elapsing in the average case between enlistment and disability precludes any great degree of usefulness on the part of the patient and is certain to cause a great many sick days and to render return to active civilian work complicated and uncertain. Furthermore, the disposition of patients with service incurred lesions can be decided on in a shorter time than has been customary heretofore. We recommend early separation from service in these cases also, especially if the individual shows any signs of psychosomatic disturbance such as emotional instability, unless his military duties are of a very specialized, noncombative character.

SUMMARY AND CONCLUSIONS

1. The ulcers in this series of 82 Marine and Naval personnel patients were incurred before enlistment in 55 per cent of the cases, in line of duty in 45 per cent. Disability occurred in an average time of two years in patients with duodenal ulcer not having the condition previous to enlistment. Those having a history of previous ulcer were disabled within six months. Few reached any combat areas.

2. The most reliable diagnostic criteria are considered a history of pain, particularly related to meals, evidence of hemorrhage and positive x-ray findings of ulcer.

3. Treatment has consisted in the use of a progressive modified Sippy type of diet with initial feedings every two hours, antacids, belladonna and vitamin supplements.

4. All patients are treated for a minimum period of six weeks with an initial period of two weeks' bed rest. Smoking is prohibited. No liberty is granted until the patient is symptom free and able to tolerate a regular diet.

5. No patient is considered a candidate for limited duty unless he can tolerate a regular diet without medication and has no evidence of an unstable emotional background.

6. Patients with proved peptic ulcer are usually discharged from the service. Limited duty within the continental limits of the United States has been recommended in a limited number of cases if the individual is particularly desirous of returning to duty, is unusually qualified from the point of view of training or experience, and there is a reasonable likelihood that the type of duty to which he returns is not too arduous and will permit of a certain amount of dietary discretion.

7. No patient with a history or findings of peptic ulcer, in our opinion, should be admitted to the armed forces. Early separation from service is recommended in all cases of peptic ulcer.

ABSTRACT OF DISCUSSION

DR. SARA M. JORDAN, Boston: Of considerable significance for postwar civilian life is the difference noted in average time between enlistment and onset of symptoms in the service incurred group (two years) and between enlistment and recurrence of symptoms in the group of ulcers not service incurred (six months). These data suggest that in persons who have an ulcer diathesis, an actual occurrence of ulcer increases the susceptibility. In my clinical experience I have been impressed with this fact and for this reason have stressed the importance of prophylaxis of this disease in ulcer prospectives. A serious effort should be made to detect those individuals who have symptoms of pylorospasm or hyperchlorhydria and x-ray evidence of pylorospasm and duodenal spasm, and, having detected them, we should make every effort to protect them against actual occurrence of ulcer with good hygiene, a reasonably careful diet and the omission of smoking. It is also important to treat ulcer intensively at its first occurrence and in this treatment to include adequate instruction concerning subsequent prophylaxis. Those of us who see ulcer complications in their most disastrous forms are constantly impressed with the fact that early intensive care could have prevented them. There is undoubtedly much less overtreatment than undertreatment of early ulcer. As Drs. Twiss and Parsonnet have indicated, the diagnosis of ulcer must often be made without the actual demonstration of a crater. Irritability of the duodenum with no actual ulcer defect may be the only radiologic finding, but, if this is associated with the subjective findings of ulcer, treatment should be instituted. Very often later x-ray examination shows a constriction in the second portion of the duodenum or an actual retraction deformity of the cap. The disappearance of irritability is, in my experience, the best x-ray guide to improvement and healing.

COLONEL JOHN L. KANTOR, M. C., A. U. S.: This report shows that Navy experience with peptic ulcer coincides closely with that of the Army. It is unfortunate that so many ulcer subjects have been inducted into the military services. Forty-five per cent of the authors' cases fall into this category, and this seems pretty much the general experience. Can something more than the present screening at induction stations be done to improve the situation? About ten years ago I recommended (*Mil. Surgeon* 74:113 [March] 1934) that inductees presenting a history of ulcer be handled as follows: A certain number might be disposed of at draft or examining boards, where it is merely a question of checking up on readily accessible data such as previous operations or diagnoses by reliable physicians or hospitals. All other ulcer suspects or ulcer claimants should be immediately hospitalized in army or navy general hospitals, where sections of gastroenterology would already be set up and in operation. It would then be the duty of the gastroenterologists to make appropriate studies and to decide between immediate rejection or acceptance for full or for limited service. By not allowing such inductees to perform any military or naval duty before hospitalization and by promptly discharging all proved ulcer cases, the service aggravation of pre-existing ulcers would be greatly reduced if not completely eliminated, thus saving the government large sums that would otherwise be paid out to meet disability claims. As to the disposition of ulcer patients, I am in general agreement with the authors. Non-service incurred cases should be discharged unless the subject is so valuable to the service that he can be given special opportunities to follow a proper diet and work in a favorable environment. Service incurred cases should be strictly individualized. Some will have to be discharged, to be sure; yet it should be noted that the arbitrary dismissal of a professional soldier or sailor, especially in the case of an officer, is as much of a psychic shock to him as is the retention in service of an unhappy civilian. In short, every effort should be made to retain trained veterans whose services are needed and who desire to continue on active duty.

CAPTAIN A. M. SNELL (MC), U.S.N.R.: The statistics on this subject, as presented by the authors, appear to be in close agreement with the general impressions which I have gathered from eighteen months' observation of patients in the gastrointestinal service of a West Coast naval hospital. Roughly, two thirds of our patients had ulcer symptoms prior to enlist-

ment, a fact which is not always given in the health record and which not infrequently requires investigation and verification by the Red Cross authorities near the patient's home. A large percentage of our patients have had foreign duty, and many of them have been in actual combat. There is no doubt that many of them would have carried on successfully in civilian life had not the psychogenic factors mentioned by the authors intervened. Living conditions on ships and shore stations in combat areas, the arduous duties required of many of our patients and their anxiety about their own situation and that of their families are obviously responsible for the reactivation of many quiescent ulcers. Return to the United States, a brief period of leave and a more normal mode of life are productive of complete symptomatic relief in many patients, and neither prolonged medical treatment nor surgery is often required. The authors mention "anxiety, insecurity, resentment and hostility" in their discussion of psychosomatic factors; the importance of these factors in men in combat areas can hardly be overestimated. In a not inconsiderable number the existence of an ulcer becomes, either consciously or subconsciously, a means of escape from a hazardous and unpleasant existence. I have been impressed at this hospital with three other matters of clinical importance: (1) the high percentage of patients who relate bizarre or atypical histories, although roentgen evidence of ulcer is indisputable; (2) the relatively small number of patients who have neither pronounced hyperchlorhydria nor hypersecretion, and (3) the relative rarity of complications. Free perforations or inflammatory penetrating lesions are rarely seen; hemorrhage of a major degree is not often a problem; and obstruction, except that of a transient nature incidental to pylorospasm, is almost unknown. I agree with the authors that the man with a peptic ulcer rarely has a useful place in military service. A few devoted individuals carry on in spite of an ulcer, and one occasionally encounters officers or petty officers who have performed long and useful duty both before and after necessary gastroduodenal surgery. To do so obviously requires a temperament not ordinarily encountered in an ulcer-bearing individual.

DR. A. H. AARON, Buffalo: One is impressed by the evidence indicating the etiologic importance of psychiatric trauma in peptic ulcer. There is definite agreement today that this results in alterations in secretion, motility and tone of the gastrointestinal tract conducive to peptic ulcer formation. It is interesting to note that 32 of the authors' patients evidently had peptic ulcer previous to their entrance into the armed forces. It seems difficult to explain how they were accepted, but having worked for a period on an induction team I can readily testify to the difficulty of obtaining an adequate history that would suggest the presence of peptic ulcer. Even after having secured such a history, one frequently finds the x-ray findings negative, and in view of this it was impossible on the suggestive history alone to exclude the individuals from military service. The symptoms of nausea and vomiting have not impressed me as of diagnostic significance in uncomplicated peptic ulcer such as we see in young adults with an average history of slightly more than a year's duration. These symptoms are more often an indication of the complicating factor of pyloric obstruction due to edema, spasm or scar tissue. I wonder if the incidence of these symptoms in their group of cases bears any relation to what has appeared in the literature as manifestations of acute psychiatric upsets occurring during the course of the war effort. I agree that medical treatment must aim toward as near as possible control of the acid peptic secretion and protection against psychiatric shock. From the surgical point of view I think the group of irreplaceable individuals on whom Walters and Butt did a resection relatively early in order to shorten the period of treatment is a very significant event and one which we may have to apply occasionally in civilian practice. The etiologic factor of emotional strain is the most difficult to control, in view of the fact that a large percentage with cardiospasm, diarrhea of undetermined origin, chronic ulcerative colitis and peptic ulcer have the same basic background of emotional instability. Why this group develops these wide divergence of conditions is not clear. In private practice I have been impressed by a careful searching history, confirmed

by x-ray, by the high indications of peptic ulcer in the teen age period. I do not know of any one better equipped than Commanders Twiss and Parsonnet to state that these patients with peptic ulcer should not be admitted to the armed forces and that, if they should enter the service and develop ulcers, early separation from service be recommended. On the other hand, in private practice these patients will have to be adjusted to continue to earn a living and carry on as near as possible the normal functions in the highly competitive field of living. We may be able to suggest change of occupation, but here again one is disturbed by the finding of peptic ulcer in the most diverse types of work, and it narrows it down to the fundamental discussion of the individual with the ulcer and the efforts of the private practitioner who sees these patients early to emphasize the advisability of early, properly controlled treatment. At the present moment those who are interested in the care of peptic ulcer are advocating a form of therapy that can be carried out by every practitioner utilizing a small group of medicinal agents, a generous simplified diet and definite personal interest in each patient. Under these circumstances it may be possible to avoid the serious complications of the disease.

CAPT. J. R. TWISS (MC), U.S.N.R.: We are entirely in agreement with the conclusion of Dr. Jordan relative to the importance of the recognition of patients having an ulcer diathesis and instituting, as soon as possible, active treatment as well as prophylactic treatment for the purpose of preventing recurrences as far as this is possible. The prompt breakdown of patients who have previously had ulcer, after coming into service, is due in no small measure to the complete inability of the medical officer to control conditions for the purpose of preventing recurrent ulcer symptoms. We are, furthermore, in full agreement with the proposal of Colonel Kantor that all patients giving a history suggestive of ulcer should be fully investigated before being admitted to the armed forces. This procedure would relieve the government of a tremendous and unnecessary financial liability in the treatment of these patients, who are of no actual value to the service after having been accepted. Our objective in regard to the retention of experienced men who desire to remain in the service, as far as circumstances permit, is in accordance with the policy expressed by Colonel Kantor. Captain Snell has shown a very practical grasp of the problems with which we have had to contend, especially in his recognition of the fact that the patient with peptic ulcer tends to utilize his knowledge of having this condition as an admitted means to obtain a discharge from the service. We feel that all patients admitted with suggestive symptoms or with a diagnosis of gastrointestinal disease should have the benefit of a gastrointestinal series. In those having no positive x-ray evidence, the diagnosis of peptic ulcer is never made, unless the history and other diagnostic findings provide what we consider incontestable evidence of this condition. Dr. Aaron's contention that in most young people the symptoms of nausea and vomiting are of functional origin is well borne out by our series of patients, in that practically none showed x-ray evidence or operative findings of obstruction sufficient to account for these symptoms.

Poliomyelitis.—Despite thirty years of concentrated clinical, epidemiological and experimental study, poliomyelitis remains as an outstanding challenge to preventive medicine. No means of preventing or curing the acute stage of the disease is yet in sight. There is equally no adequate knowledge on which to base any straightforward account of the natural history of the disease. . . . Poliomyelitis, in its clinically visible form of fever and signs of central nervous system infection followed by more or less extensive paralysis, is known to be due to invasion by one of the smallest viruses. The virus can produce essentially similar infections in several species of monkey but, except for a small proportion of strains, in no lower type of animal. The more important characteristics of the virus and the pathology of experimental infections have been fully elucidated, but a great deal remains to be learnt in regard to the epidemiology of the disease.—Burnet, Frank MacFarlane: *Virus as Organism*, Cambridge, Mass., Harvard University Press, 1945.

TREATMENT OF DIABETIC ACIDOSIS AND DIABETIC COMA

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Although the agents available for the treatment of diabetic acidosis have remained the same for many years, there is today no universally accepted procedure in the management of this common medical emergency. No one will deny that the two most urgently needed substances are insulin and isotonic solution of sodium chloride, but worthy of critical review are (a) the desirability of administering glucose in the early phases of therapy, (b) the need for frequent determinations of blood sugar and carbon dioxide combining power in regulating the treatment, (c) the optimum size of the doses of insulin, and their frequency of administration, and (d) the need for the constant attendance of a team of specialists in the field of diabetes mellitus to guide the therapy.

At the New York Hospital, during the past five years, nearly all patients with diabetic acidosis and diabetic coma have received liberal amounts of glucose by mouth, by vein or by both routes from the time of admission. The course of therapy has been followed almost entirely by clinical signs and by qualitative tests for sugar, acetone and diacetic acid in the urine. The blood sugar and carbon dioxide combining power have rarely been used as indexes of the severity of the disorder or of the progress of treatment, and indeed these estimations have been made, in most instances, only after recovery from ketosis. The individual insulin doses have been small and repeated frequently. All but a few of our cases have been treated by the intern, with advice from the medical resident physician. As these practices differ considerably from those advocated by such authorities as Joslin¹ and Root,² we have been led to review the results of our therapy. The facts obtained are the basis of this report.

METHOD OF TREATMENT

Interns are instructed to treat diabetic acidosis and diabetic coma as follows:

1. As soon as the diagnosis is made, give 25 units of regular insulin subcutaneously and repeat this every half hour until the patient is free from all signs of ketosis, as judged by clinical and laboratory evidence.
2. When possible, replacements of fluid, salt and carbohydrate should be given by mouth. Give in each hour (a) 50 to 75 Gm. of glucose as orange juice (500-750 cc.), grape juice (300-450 cc.) or fortified fruit juices; (b) salty broth, 200 cc.; (c) enough water to make the total fluid intake 1,000-1,500 cc.
3. If the patient is drowsy or comatose, or if the patient has vomited or has been nauseated during the preceding twenty-four hours, therapy must be begun by the intravenous route: (a) Infusion of 5 per cent glucose in isotonic solution of sodium chloride, which should run in at first at the rate of 750-1,000 cc. per hour. (b) The rate of this infusion should be reduced

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1. Joslin, E. P.: *Medical Progress*, New England J. Med. 222: 219 (Feb. 22) 1945.

2. Root, H. F.: *The Use of Insulin and the Abuse of Glucose in the Treatment of Diabetic Coma*, J. A. M. A. 127: 557 (March 10) 1945.

as soon as dehydration is relieved. Patients over 40 years of age, any with notable arteriosclerosis and any with cardiovascular disease may have to be infused at slower rates and should be observed frequently and with extreme care for signs of increased venous pressure and passive congestion of the lungs.

TABLE 1.—Age Distribution

Age	Number of Patients
0-10.....	3
11-20.....	16
21-30.....	18
31-40.....	12
41-50.....	7
51-60.....	10
61-70.....	3
71 and over.....	2

TABLE 2.—Duration of Diabetes

Not previously diagnosed.....	13
Under 1 year.....	9
1 to 5 years.....	41
Over 5 years.....	27

Return to the oral route as soon as the patient is fully conscious and free from nausea.

4. Test a urine specimen every half hour or every hour for sugar, acetone and diacetic acid. (Catheterize if necessary.) Continue the foregoing therapy until the urine is free from acetone and diacetic acid. Do not leave the ward until this is accomplished.

5. When ketonuria and all clinical signs of acidosis have disappeared, give fruit juice and 25 units of insulin at two hour intervals for at least eight more hours.

6. If the patient is anuric, guide the therapy by frequent estimations of the carbon dioxide combining power of the blood. This rule will also apply if acidosis should occur without the presence of acetone bodies

TABLE 3.—Daily Insulin Requirements

Units of Insulin	Number of Cases
None.....	5
Less than 25.....	13
25 to 50.....	32
More than 50.....	26

TABLE 4.—Precipitating Causes of Diabetic Acidosis

Breath-holding diet.....	27
Failure to take insulin.....	41*
Infection.....	46
Severe.....	22
Mild.....	24
Coronary occlusion.....	1
Fracture of femur, toxic nodular goiter.....	1
Insulin resistance.....	1
None observed.....	15

* This figure includes (a) neglect of insulin administration, sometimes due to misunderstanding; (b) cases in which diabetes had not been previously diagnosed and (c) those who had not previously been thought to require insulin.

in the urine. (Such cases are exceedingly rare and have not yet occurred in our experience.)

Every patient whose urine contains sugar and acetone bodies is treated thus, regardless of the severity of the diabetic acidosis. Many of the milder cases so treated have been excluded from the series reported here, but no fatal case has been excluded, nor any in which the acidosis did not promptly respond to treatment.

This report concerns all cases of diabetic acidosis and diabetic coma admitted to the New York Hospital from Jan. 1, 1940 to Dec. 31, 1944 which satisfied the following criteria: 1. Ketonuria, determined by the ferric chloride reaction for diacetic acid and/or the nitroprusside test for acetone. The test for acetone was read as 3 plus or 4 plus in all but 5 cases, in which a 2 plus reaction was associated with severe clinical signs of acidosis. 2. One or more clinical signs of acidosis, as listed in table 5. 3. The requirement of at least 75 units of insulin over a period of three hours to eliminate ketonuria.

There were 99 such occurrences in 71 patients; 28 of the patients were men and 43 were women. The age distribution is shown in table 1. Twenty-two, or 31 per cent of the patients, were over 40 years of age.

The duration of diabetes prior to admission for diabetic acidosis is shown in table 2. In 13 instances the existence of diabetes was not previously suspected, and in 27 instances the patient had been treated for diabetes for five years or more. This distribution is similar to that reported by Joslin.³

In table 3 are summarized the daily insulin requirements of these patients before or after hospitalization. These amounts of insulin were sufficient to produce

TABLE 5.—Clinical Symptoms and Signs

	Not Noted
Comatose.....	3*
Not noted.....	38
Noted.....	31
Noted.....	10
Acetone breath.....	63
Soft eyeballs.....	44
Anuria and circulatory shock.....	1

* One additional patient was not in coma on admission but died in coma. See fatal case 7.

good clinical control by our criteria, namely maintenance of weight, freedom from symptoms of diabetes, freedom from ketosis and absence of insulin reactions. We are impressed that the "mildness" of diabetes, as indicated by the need for little or no insulin, is not a guaranty against acidosis.

In table 4 are listed the precipitating causes of diabetic acidosis in these patients. It is confirmed here that infection and omission of insulin are the most important causes of acidosis. On evaluating the dietary intake over the last few days before admission, it was found that 25 patients had eaten less than their usual diet and that only 2 had eaten more. One of these 2 patients had run out of insulin the day before admission. The other patient had stopped taking insulin two days before admission and during this period had eaten her usual diet plus a large quantity of peanuts. In most publications, one of the important causes of ketosis in a diabetic patient is given as "dietary indiscretion," and this is often interpreted as eating concentrated sweets or other foods in addition to the permitted diet. After our experience we find it difficult to accept the dictum that overeating per se is a cause of diabetic acidosis.

The clinical signs and symptoms exhibited by these patients are presented in table 5. Coma is defined by us as a state of unconsciousness in which the patient fails to respond to any stimulus, and thus the 3 patients

3. Joslin, E. P.; Root, H. F.; White, Priscilla; Marble, Alexander, and Hunt, H. M.: Diabetic Coma, *M. Clin. North America* 16: 791 (Jan.) 1933.

in that category belong in "stage 4" of coma as defined by Rabinowitch.⁴ All cases in which the condition was described as drowsy, semicomatose or in other ways indicating impairment of the sensorium with some responsiveness are here listed as semiconscious. Thus slightly over half of the patients had disturbances of the sensorium and fall into the various categories of coma outlined by Rabinowitch.⁴ Only 1 patient was in circulatory shock, and this patient only developed anuria. In 46 of the cases there was an infection in association with diabetic acidosis, and in 22 it was so severe as to constitute by itself an indication for hospitalization.

The total amounts of insulin, glucose, sodium chloride and fluid administered in the first twenty-four hours are given in table 6. Only 2 patients received single insulin doses greater than 50 units, and 1 of these was a case of proved insulin resistance (fatal case 7). A few of the patients received protamine zinc insulin during the first day in the hospital, but in general it has been our custom to postpone the use of slower acting insulin until at least two days after entry. In 27 of the cases, sixth molar sodium lactate was given intravenously.

The interval required to relieve ketosis was estimated from the time of disappearance of ketonuria. This

TABLE 6.—Quantities of Therapeutic Agents Given in First Twenty-Four Hours

	Minimum	Maximum	Median
Insulin units.....	75	885	187
Glucose, Gm., intravenous.....	10	750	112
Glucose, Gm., total, all routes.....	50	890	312
Sodium chloride, Gm., intravenous..	4.5	55	15.5
Fluid, cc., all routes.....	1,500	17,700	5,250

could be determined accurately in 95 cases. From table 7 it can be seen that 20 of these (21 per cent) remained in ketosis longer than twelve hours.

Table 7 reveals that the time of recovery was about the same irrespective of the route of administration of glucose. The patients in whom recovery was delayed did not receive more glucose than those who recovered more rapidly: The median intake of glucose in the first twenty-four hours by these patients is exactly the same (312 Gm.) as that reported for the entire series in table 6. The patients in whom recovery was delayed beyond twelve hours did, however, receive less insulin in each hour than is desirable. Although we recommend a constant dosage of 50 units of insulin per hour until recovery, only 1 of these patients received that amount. The rest received from 4 to 27 units per hour, with a mean dosage of 12 units per hour. We are led to conclude that delay in recovery was associated not with the excessive intake of glucose but with inadequate dosage of insulin.

There were 7 deaths in this series. The salient features are presented in table 8, and the protocols are given herewith:

CASE 1.—A man aged 55 was admitted with coronary occlusion and mild diabetic ketosis. He was completely conscious throughout. The ketosis was cleared in eight hours with 150 units of insulin, oral glucose, oral and parenteral fluids and salt in limited quantities. There was no ketosis in the ensuing twenty-eight hours, until death. Autopsy showed two fresh myocardial infarcts, with aneurysm formation and beginning rupture of the ventricle.

4. Rabinowitch, I. M.; Forster, A. F., and Bersler, F. H.: *Diabetic Coma*, Ann. Int. Med. 12: 143 (March) 1939.

CASE 2.—A woman aged 49 had acute purulent frontal sinusitis due to hemolytic *Staphylococcus aureus*, with cellulitis of the face, left exophthalmos and ophthalmoplegia. Her urine on admission contained 2 plus acetone and 2 plus diacetic acid, and the patient was drowsy. She was cleared of ketosis in eight hours, using 125 units of insulin plus intravenous sodium lactate and oral and intravenous glucose. Despite this therapy

TABLE 7.—Duration of Ketonuria

Time	Oral Glucose Only		Oral and Intravenous Glucose		All Cases	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Under 4 hrs.....	4	14	4	6	8	8
4 to 12 hrs.....	17	61	50	75	67	71
Over 12 hrs.....	7	25	13	19	20	21
Total.....	28	100	67	100	95	100

her mental state did not improve, and she later became completely comatose. Lumbar puncture showed turbid spinal fluid with 150 white blood cells per cubic millimeter. Ketosis did not reappear in the remaining forty-eight hours of her life, although the temperature remained between 39 and 40 C. (102.2-104 F.). She had massive edema of the orbits and face, unrelieved by surgical drainage of the frontal and ethmoid sinuses, together with the removal of necrotic frontal bone. The patient was further explored through burrholes by the neurosurgeon, who found no localized intracranial abscess and felt that she had a cavernous sinus thrombosis. Despite adequate penicillin therapy she died on the third day in the hospital.

CASE 3.—A woman aged 40 was admitted with cellulitis of the neck and severe diabetic acidosis. She was semicomatose. In another service of our hospital, to which she was admitted, ketosis was cleared only after twenty to twenty-four hours, intravenous glucose and sodium lactate being used and only 160 units of insulin. She then relapsed into acidosis, which was finally cleared forty-five hours after admission and twenty-

TABLE 8.—Fatal Cases

Case, Sex, Age	Mental Status	Duration of Ketosis	Interval Free of Ketosis Before Death	Associated Conditions	Autopsy
1 ♂ 55	Conscious	8 hrs.	23 hrs.	Myocardial infarcts	Yes
2 ♀ 49	Semiconscious	8 hrs.	15 hrs.	Sinusitis, cellulitis, probable cavernous sinus thrombosis	No
3 ♀ 40	Semiconscious	45 hrs.	22 hrs.	Staphylococci septicemia and pneumonia	Yes
4 ♀ 43	Conscious	6 hrs.	4 days	Cirrhosis; type 1 pneumococci pneumonia with bacteremia	Yes
5 ♀ 77	Semiconscious	14 hrs.	8 days	Fractured neck of femur, generalized atheromatosis; thyrotoxicosis	Yes
6 ♀ 53	Conscious	2 hrs.	0	Lobar pneumonia	No
7 ♀ 50	Comatose	45 hrs.	0	Insulin resistance	Yes

two hours prior to death. During this time the temperature fluctuated from 39 to 41 C. (102.2-105.8 F.). The patient developed pneumonia and septicemia; both blood and sputum cultures were positive for hemolytic *Staphylococcus aureus*, the blood culture showing 12 colonies per cubic centimeter. At this time she was transferred to our service, but she died seven hours later in pulmonary edema. Autopsy showed carbuncle of the neck, septic infarcts of the lungs, bronchopneumonia of all lobes and bilateral empyema, all due to the hemolytic *Staphylococcus aureus*.

CASE 4.—A man aged 43 was admitted in diabetic ketosis, lobar pneumonia and bacteremia due to *Pneumococcus* type 1. The blood culture showed 260 colonies per cubic centimeter. Ketosis was mild and was cleared in six hours, only 75 units of insulin being used with oral and intravenous glucose. However, occasional traces of acetone reappeared until death. Despite the use of sulfadiazine and 200,000 units of type 1 antipneumococcus serum, the blood culture on the third hospital day showed 250 colonies per cubic centimeter and there was clinical evidence of spread of the pneumonic process. The patient died on the fourth day in the hospital, and autopsy showed complete consolidation of the right lower and right middle lobes, nearly complete consolidation of the right upper lobe, and patchy involvement of the left lung. In addition there were Laënnec's cirrhosis of the liver, with splenomegaly and subarachnoid hemorrhage.

CASE 5.—A woman aged 77 was admitted with fracture of the neck of the femur and diabetic acidosis. She was drowsy on admission, and ketosis was cleared in fourteen hours by means of 175 units of insulin and oral and intravenous glucose. There was no ketosis in the eight days prior to death, which was unexplained even after autopsy. The findings at autopsy were fracture of the neck of the femur, generalized atherosclerosis, nephrosclerosis, slight hyperplasia of the thyroid gland and slight bronchopneumonia.

CASE 6.—A woman aged 53 was admitted with lobar pneumonia of about seven days' duration, then involving almost all of the right lung. She was alert on admission but showed a heavy ketonuria. She received 90 units of insulin, 1,000 cc. of 10 per cent glucose in saline solution intravenously, plus oral glucose, but remained in ketosis until death two hours later in pulmonary edema.

CASE 7.—A diabetic woman aged 50 was admitted for study of insulin resistance. While in another hospital she had continued to show acetone and glucose in the urine even while receiving 400 units of insulin per day. An insulin tolerance test at that time had shown no response of the blood sugar to 50 units of regular insulin. On admission to our hospital she was alert and in mild ketosis, which cleared in fifteen hours on oral feeding and 625 units of insulin. On her fifth day in the hospital she again had asymptomatic acidosis, which cleared in twelve hours with 430 units of insulin, oral glucose and intravenous glucose. She was then free of ketosis until the tenth day in the hospital, after which progressively severe acidosis developed and she died in coma three days later. The administration of insulin was complicated by the development of local inflammation at the sites of injection; much of her insulin was given intravenously, but it was not more effective by this route. In the last twenty-four hours she received 1,310 units of insulin and 400 Gm. of glucose intravenously. Autopsy revealed no other cause of death. The patient's serum was shown to protect twice against convulsive and fatal doses of insulin.

Of these 7 fatal cases, only 2 remained in ketosis until the time of death. The others were freed from ketosis from one to eight days before death. Three of the patients were never drowsy or comatose. In 6 cases death was directly due to a highly fatal associated disease, not to diabetic acidosis, and in 4 of these our conclusions were substantiated by postmortem examination. In 1 of these cases (case 3) the fatal dissemination of a staphylococcal infection occurred after delay in the vigorous treatment of acidosis. This patient was transferred to our service in a moribund condition seven hours before death. In the seventh case the cause of death was diabetic coma, and it was established that this patient had specific neutralizing antibodies for insulin. We conclude that the crude mortality rate in this series is 7 per cent and that the mortality rate from diabetic acidosis is 1 per cent.

COMMENT

These results of therapy are not presented for purposes of comparison with those obtained at other hospitals where different methods of treatment are used. Such comparisons are not valid because of the many factors which determine the prognosis in the individual case. These factors have been exhaustively studied and discussed by Rabinowitch,⁴ and the more important ones from our experience are (a) the chronological and physiologic age of the patient, (b) the presence of associated diseases of serious import and (c) the severity of diabetic acidosis.

In 819 cases from four separate clinics, Rabinowitch⁴ found a regular increase in mortality rate with advancing age. In patients under 20 years of age the mortality rate was 5.1 per cent. About one third of the patients were over 40 years of age, and in these the mortality rate was 48.5 per cent. One third of our patients were 40 years of age or over, and all of the fatal cases were in this age group.

The mortality rate may be expected to be higher when to the risk of death from diabetic acidosis is added the risk of death from some other dangerous disease. In almost all reported series of cases of diabetic acidosis the mortality in complicated cases far exceeds that in uncomplicated ones. Indeed, there should be almost no mortality from uncomplicated diabetic acidosis under present day management. All but 1 of our fatal cases were complicated by another highly fatal disease which appeared on good clinical or pathologic grounds to be the major cause of death.

The severity of diabetic acidosis is estimated in some clinics largely by the state of consciousness of the patient, in others largely by the carbon dioxide combining power of the plasma. Rabinowitch⁴ has clearcut evidence on the relative prognostic value of these indexes. There was a direct relationship in his 125 patients between the degree of unconsciousness and the mortality rate. But in 713 collected cases there was no relationship between the level of the carbon dioxide combining power and the mortality rate. The highest mortality rate, in fact, occurred in patients with a carbon dioxide combining power above 25 volumes per cent! It has therefore seemed better to rely on the state of consciousness of the patient as the more correct and convenient index of the degree of ketoacidosis.

Although this series contains an average proportion of elderly patients and numerous instances of serious associated diseases, only a minority of our patients had serious disturbances of the sensorium.⁵ It may be argued that our method would appear less successful if we had had more comatose patients. Yet the conscious and the unconscious patients in this series were handled with equal ease, and the difficulties encountered were those of complicating conditions rather than those of intractable ketosis. In our hands this method of therapy has produced results as good as those achieved by other methods in current use. Before recommending it for general use, we would ask (a) Is it rational? (b) Is it practical, convenient and safe?

A patient in diabetic acidosis has invariably lost in his urine during the preceding days large amounts of water, sodium and glucose. This has been associated with a relative insufficiency of insulin. Particularly when nausea and vomiting are present, these losses

5. This is probably due in part to the fact that our hospital does not maintain an ambulance service. Hence most patients who are found in an unconscious state in our neighborhood are taken to city hospitals.

are not compensated by increased intake. The loss of sodium and water from the extracellular fluid is adjusted by transfer of water and potassium ion from the intracellular fluid. The loss of glucose is compensated by breakdown of liver glycogen, by gluconeogenesis from protein and by substituting fat for carbohydrate as a primary source of energy. Fat is burned for energy after being first broken down by the liver into ketone bodies. All of these processes are efficient only within limits, and, as Stadie⁶ and Mirsky⁷ have shown, when the rate of production of ketones by the liver exceeds the maximal rate of utilization of ketones by the tissues, ketones accumulate in the blood, combine with fixed base, and produce acidosis and ketonuria. The fundamental disturbance in diabetic acidosis is a depletion of water, sodium and glucose in association with a relative insufficiency of insulin.

There is general agreement that the most important step in the therapy of acidosis is the use of large quantities of insulin, and to this we subscribe. There is likewise general recognition of the need for restoring water and sodium ion, and in all clinics the patients receive water and sodium chloride, by vein if necessary. Sodium chloride is useful for relieving acidosis only if the kidney is capable of excreting the chloride in combination with ammonium ion, the sodium being retained as base. If the kidney is insufficient, most will agree that it is better to supply sodium as sodium lactate or sodium bicarbonate.

There has been disagreement concerning the use of glucose in the treatment of diabetic acidosis and diabetic coma. The state of depletion of carbohydrate in the body in diabetic coma has not generally been recognized because the blood, the only tissue tested under such circumstances, always shows an excessive concentration of sugar. That there is truly a state of depletion of carbohydrate in the body in coma is attested by the figures of Soskin,⁸ although these figures are contested by Root.² The technical difficulties of obtaining accurate analyses for glycogen on human patients are almost insuperable, and, rather than rely on data of questionable accuracy to determine whether the body is depleted of sugar, we have chosen to recognize the simple fact that there is an extra loss of carbohydrate from the body with unchanged or with diminished intake. In other words, the body is in negative carbohydrate balance.

It has been alleged by some writers that glucose "neutralizes" the action of insulin in the treatment of diabetic acidosis. This thesis has been supported almost entirely by reports of cases in which death has followed the use of glucose in the treatment of ketosis. In these cases it has been impossible to establish a clear relation of cause and effect. Let us inquire how this thesis fits in with what is known of the physiology of diabetic acidosis and of the actions of insulin:

The central problem in the relief of diabetic acidosis is to suppress the formation of ketone bodies in the liver. This is probably accomplished both by stimulating carbohydrate oxidation and by inducing the accumulation of glycogen in the liver. It is well known that insulin favors the accumulation of liver glycogen, and this is thought to be due to an inhibition of gly-

cogenolysis. Banting and his associates⁹ demonstrated that in fasting animals the hyperglycemia which follows the administration of epinephrine is prevented by insulin. Does glucose oppose the accumulation of liver glycogen in the diabetic organism? It does not. Increases of liver glycogen in diabetic animals have been obtained by Major and Mann¹⁰ and by Bodo and his associates¹¹ by infusions of glucose without the use of insulin. Mirsky⁷ has shown that diabetic patients in ketosis, either deprived of insulin or receiving suboptimal doses of insulin, exhibit diminished ketonuria and greater retention of carbohydrate when the intake of carbohydrate is greatly increased. In their effects on the level of liver glycogen, glucose and insulin are not antagonists. It seems more logical to regard them as substrate and enzyme in the same chemical reaction. This is in line with the findings of Macleod,¹² who studied the effects of insulin on diabetic animals with various levels of glucose intake, and concluded that:

The action of insulin on glucose metabolism no doubt proceeds according to the same general laws as govern enzyme action, namely that the amount of substrate which is acted on is not a linear function of the amount of enzyme but is relatively much greater when there is a large excess of substrate compared with the amount of enzyme. This latter condition is fulfilled when small amounts of insulin are given, or when, with larger amounts, the intake of sugar is increased.

Campbell, in the clinical section of the same paper, put this into practical terms. Speaking of the treatment of diabetic acidosis,

It has been the custom in Toronto [he said] to use 1 gram of glucose or other carbohydrate for each unit of insulin.

Indeed, the only known antagonism of glucose and insulin in diabetic individuals is in relation to the level of blood sugar. How unimportant a normal level of blood sugar is in recovery from diabetic acidosis is indicated by the fact that almost every one of our cases was cleared of acidosis while having a 4 plus glycosuria.

We differ from some other students of this problem in the degree of emphasis we place on the determination of the blood sugar and the carbon dioxide combining power in gauging the severity of acidosis and the progress of therapy. We have already indicated of how little value is the carbon dioxide combining power in determining the prognosis. We do not deny that a well run determination by an experienced technician is an accurate index of the severity of acidosis at the time it is taken, but though it may outweigh in accuracy the impression one gains from observing the respirations and the state of consciousness of the patient, this advantage is overcome by the delay in receiving the report. We have found that the result of such a determination is not available until from one to three hours later, and in many instances it is then only of academic interest. The determination of blood sugar is of no value for guiding therapy when glucose is administered as a part of the treatment. Our policy with respect to the use of blood chemical determinations is to use them when it is convenient to do so and to regard them as supplementary aids but almost never to perform them as emergency procedures.

6. Stadie, W. C.: Fat Metabolism in Diabetes Mellitus, *Ann. Int. Med.* **15**: 783 (Nov.) 1941.

7. Mirsky, I. A.: The Etiology of Diabetic Acidosis, *Proc. Am. Diabetes A.* **1**: 51, 1941; *J. A. M. A.* **118**: 690 (Feb. 28) 1942.

8. Soskin, Samuel: The Storage and Significance of Tissue Glycogen in Health and Disease, *Proc. Am. Diabetes A.* **2**: 119, 1942.

9. Banting, F. G.; Best, C. H.; Collip, J. B.; Macleod, J. J. R., and Noble, E. C.: The Effects of Insulin on Experimental Hyperglycemia in Rabbits, *Am. J. Physiol.* **62**: 559 (Nov.) 1922.

10. Major, S. G., and Mann, F. C.: The Formation of Glycogen Following Pancreatectomy, *Am. J. Physiol.* **102**: 409 (Nov.) 1932.

11. Bodo, R. C.; Co Tui, F., and Farber, L. A.: The Relation of Insulin to Liver Glycogen, *Am. J. Physiol.* **101**: 10, 1932.

12. Campbell, W. R., and Macleod, J. J. R.: Insulin, *Medicine* **3**: 195 (Aug.) 1924.

The need for laboratory aids in estimating the severity of acidosis is further minimized in our method by the fact that we do not individualize the dosage of insulin but instead treat each patient with large amounts of insulin until ketosis is cleared. The individual dose of insulin given is small (25 units) but it is repeated every half hour. Thus it is intended that the patient receive in a period of six hours 300 units of insulin, a total dosage which is similar to that given in most clinics over an equal period of time. We believe this practice is effective because patients with all degrees of acidosis have responded equally well, and the only patient who failed to respond was one who was shown to be insulin resistant. We believe it is safe because we simultaneously administer glucose, and this has prevented the occurrence of hypoglycemia. A further danger of too vigorous treatment of acidosis has recently been suggested by Root, who points to the possibility of overloading the liver cells with glycogen. This hypothesis has been based, as far as we know, entirely on histologic studies of the liver. Such studies are not noted for their accuracy. Ketone production in the liver is probably suppressed at a time when the concentration of glycogen in the liver is still far below normal. Then when the ketone bodies disappear from the urine the dosages of insulin and glucose are reduced. In these circumstances it seems unlikely that there is danger of damaging the liver by excessive deposition of glycogen.

In most clinics it is the rule to administer large doses of insulin at a time, yet there are hardly two clinics that have the same concept of optimal dosage. The maximal rate of utilization of insulin is not known, and all routines for its use have been empirically constructed. In our plan of therapy, small doses of insulin are given and repeated frequently. We think that such a course is more efficient, because it has been known since the original work of Banting and his associates that the law of diminishing returns applies to insulin: Small doses metabolize more carbohydrate per unit than do large doses. We think that this procedure is safer, because there is less likelihood of severe hypoglycemia from the delayed effect of large doses of insulin.

We are aware that as good results as ours in the treatment of diabetic acidosis have been achieved by workers with long experience in this field, using a method which forbids the use of exogenous glucose, which demands control of the progress of the patient by frequent chemical testing of the blood and which relies on the empirical selection of proper doses of insulin. We are inclined to regard these good results as due in large part to the great experience of these physicians, for we know of other groups with equal medical wisdom and conscientiousness who have failed to achieve equal results by the same method. Our method has not been used extensively by specialists in diabetes mellitus; the results reported here were achieved by interns. We are convinced that this method is simpler. It allows the treatment of all cases of diabetic acidosis with equally large individual doses of insulin, without fear of insulin reactions. It does not require the use of time consuming laboratory tests. It does not require the constant attendance of a diabetes specialist to select the appropriate dose of insulin. In other words, this method can be applied by any physician who has facilities for testing the urine and who understands the basic functional pathology of diabetic acidosis.

SUMMARY

1. A method of treatment of diabetic acidosis has been adopted in which are used small and frequently repeated doses of insulin and replacement of water, sodium chloride and glucose by mouth or by vein.
2. The course of therapy is guided by clinical signs and qualitative analysis of the urine for sugar and acetone bodies.
3. In the great majority of cases at our institution, treatment is given by the house staff, guided only by the resident physician.
4. Among 99 cases of diabetic acidosis and diabetic coma so treated during the past five years there were 7 deaths, only 1 of which was due to diabetic acidosis per se. In that patient there was proved insulin resistance of a high order.

CONCLUSION

Our experience indicates that patients with diabetic acidosis or diabetic coma can be successfully treated with small, standard and frequently repeated doses of insulin, that the administration of glucose in this disorder is beneficial and not harmful, that it is not necessary to follow the blood sugar and carbon dioxide combining power as guides to therapy, and that with such a simple method the constant attendance of specialists in diabetes mellitus is, in all but rare instances, unnecessary.

Clinical Notes, Suggestions and New Instruments

BUERGER'S DISEASE IN A BOY OF SIXTEEN YEARS

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Thromboangiitis obliterans usually affects males between the ages of 20 and 50 years. Horton¹ reported a series of 984 cases seen over a period of thirty years at the Mayo Clinic in which their youngest patient was 17 years of age. A search indicates that the subject of the present report is the youngest in the English literature. The disease developed while he was 15 and was well advanced when we saw him shortly after his sixteenth birthday.

REPORT OF CASE

J. D. H., a high school student aged 16, presented himself to the outpatient department of the Mason Memorial Hospital at Murray, Ky., on Dec. 13, 1938 because of pain and tenderness in his right foot. Four months previously he had observed that the ball of this foot was tender. In the course of time this tenderness was replaced by numbness, then a burning sensation and finally severe pain, especially in the fourth and fifth toes. The right calf was sore and cramped when he walked. The situation became progressively worse, so that on December 26 he was admitted to the hospital for treatment. He arrived about midnight complaining of excruciating pain in his right foot, especially the fifth toe.

His ancestors, who had been Americans for several generations, were of Scotch-Irish extraction with nothing of special significance in the family history. He was a normal breast fed infant who had passed through a normal childhood with no incidents of clinical interest other than uncomplicated measles, whooping cough and scarlet fever. His adolescence had been uneventful until the onset of the present disability. He had smoked cigarettes for about two years and at the time of admission was using about twenty cigarettes a day.

Physically he was rather slender and evidently rapidly growing, and his general development was about normal. He did not appear acutely ill but evidently was suffering much pain.

1. Horton, B. T.: The Outlook in Thromboangiitis Obliterans. *J. A. M. A.* 111: 2184-2189 (Dec. 10) 1938.

His temperature was 98 F., pulse rate 84, respiratory rate 16 and blood pressure 126/74. His height was 68 inches (173 cm.) and weight 122 pounds (55 Kg.). A rather extensive chronic acne was present on the face and upper part of the chest. No disease or abnormality of the heart or lungs was found. The upper extremities were normal with no disturbances of blood supply, trophic changes or signs of autonomic imbalance.

No other significant departures from normal were present aside from the findings in the right lower extremity. The right foot was cold, mottled and cyanotic. A gangrenous appearing ulcer on the fifth toe extended from the base of the nail to the medial aspect of the toe. The ball of the foot and the fourth and fifth toes were very tender and painful. Pulsations were absent in the dorsalis pedis and posterior tibial arteries and reduced in volume in the popliteal artery. When the foot was elevated it became blanched, when dependent it was very cyanotic and when on the horizontal plane its color was a mottled cyanosis. The right leg below the midcalf was constantly colder than the left. None of the abnormal findings of the right lower extremity were present on the left.

Mentally he was of average intelligence, well adjusted and emotionally stable. Neurologic findings were within normal limits.

The laboratory findings were not striking. Blood examination revealed a normal red cell count, hemoglobin, leukocyte and differential count, blood sugar and nonprotein nitrogen. A mild leukocytosis appeared for a few days when the toe ulcers were the most extensive. Blood sodium chloride was 454 mg. and the Wassermann reaction was negative. The urine was essentially normal.

On the second hospital day he was given a procaine spinal anesthetic as a diagnostic measure. Anesthesia was produced in both lower extremities. The left leg and foot became pink and warm and the dorsalis pedis and posterior tibial pulsations were voluminous, but very little change, if any, was observed in the right foot. It remained cold and cyanotic and its arteries pulseless. These findings, considered in the light of the history and physical findings, substantiated a diagnosis of thromboangiitis obliterans.

Treatment consisted of Buerger's exercises twice a day, contrast leg baths three times a day, local dressings of butesin picrate to the ulcerated toes and analgesics as needed. A heating cradle at about 95 F. was tried for a few hours, but it so increased the pain that it was removed. All tobacco was discontinued.

During the first ten days of hospitalization all of his symptoms became progressively worse. The ulcer on the fifth toe became larger, and a smaller one appeared on the adjacent fourth toe. The pain became so severe that opiates were required and the patient requested that his toes be amputated. On the eleventh day, apparently without reason, the foot became quite comfortable and the ulcers began to heal. Evidently sufficient collateral circulation had developed to permit rapid and uninterrupted healing. Eighteen days later, when the patient was discharged from the hospital, the ulcers were healed and the foot was comfortable.

On returning home the patient was instructed to take extra good care of his feet, to continue with Buerger's exercises and to return periodically for a checkup. Later he returned to high school and drove a truck during vacations. Sustained brisk walking caused mild intermittent claudication, but he had no more serious difficulty. The arterial pulsations in the right foot remained absent to palpation. Early in 1941 he was accepted by the Navy and according to reports late in 1943 he was still carrying on successfully.

SUMMARY AND COMMENT

1. A case of Buerger's disease had its onset at the age of 15 years.
2. Severe disease of the right foot improved rapidly with Buerger's exercises, contrast leg baths and discontinuance of all tobacco. Nearly four years later the patient had no relapses. It is difficult to evaluate the part treatment played in the unexpected rapid improvement in this patient.
3. The interest and significance of this case report is that Buerger's disease may develop so early in life.

TREATMENT OF SEVERE NECROTIC LESIONS HIGHER PENICILLIN DOSAGE WITH SIMULTANEOUS REGIONAL SYMPATHETIC BLOCK

MEYER NAIDE, M.D., AND ANN SAYEN, PHILADELPHIA

Gas gangrene has been reported in fairly large numbers in this war. Forty-four cases with 13 deaths and 8 additional amputations in recovered patients were reported by MacLennon¹ in British army casualties in the North African campaign, an incidence of between 6 and 7 per thousand wounded. Twenty cases were seen by Power² in 6,000 casualties in the fighting in Normandy. In 16 of these patients there were 10 amputations and 2 deaths.

Despite increase in the potency of antiserums and chemotherapy, local and systemic, results of treatment of gas gangrene are not much better than they were twenty-five years ago.³ A consideration of the problem makes it obvious that the reason for failure is twofold: There is an inadequacy in blood supply to necrotic tissue and therefore the amount of penicillin reaching this tissue at the usual blood level is completely inadequate. This may explain the failure of chemotherapy in some patients and the present high mortality and amputation rate. Nowhere in the literature have we been able to find a suggestion that much larger doses of penicillin are required when there is reduced blood flow. Power² as recently as May 12, 1945 has gone so far as to state that "early reports on penicillin would indicate that it is powerless to stem the progress of gas gangrene."

That gas gangrene occurs in ischemic, necrotic tissue is recognized.² That chemotherapy of ischemic tissue is a special problem in itself has not been recognized.

The importance of this problem was brought to our attention by the death of 1 patient with gas gangrene in an ischemic extremity treated with the recommended dose of 100,000 units of penicillin daily, intramuscularly and the recovery without amputation of another patient with a similar infection in an ischemic extremity, but treated with 600,000 units of penicillin daily, intravenously and with two periods of continuous caudal anesthesia for prolonged complete vasodilatation. This led us to the opinion that penicillin is being used in completely inadequate dosage in severe infections in ischemic tissue.

Following is the report of a case of gas gangrene in an ischemic extremity finally treated by us with massive doses of penicillin and caudal anesthesia:

A woman aged 50 was admitted to the University Hospital on April 24, 1945 with a history of diabetes mellitus for seven years. In March 1945, one month before admission to the hospital, she refused to take her daily dose of 30 units of protamine zinc insulin. One week later she noticed that several toes were black on both feet. A week before admission to the hospital she developed fever. The significant physical findings on admission were a temperature of 102 F., pulse rate of 120, a systolic murmur at the apex, foul-smelling gangrene of the second toe on the right foot and the second and third toes on the left foot, with cellulitis of both feet. The dorsalis pedis pulses were present but the posterior tibials were absent. Cataracts had been removed bilaterally. A note was made on the day of admission that bilateral amputation would probably be necessary to control the infection. The white blood cell count was 14,000, the blood sugar 250 mg. per hundred cubic centimeters. The urine was positive for sugar and acetone. Carbon dioxide was 41 volumes per cent.

The patient was started on 100,000 units of penicillin intramuscularly on the day of admission, April 24. On April 27 x-rays showed a large quantity of gas in the soft tissues of the right foot and to a lesser extent in the left, with either osteomyelitis or demineralization of the right second and the left second and third toes. That day the affected toes were amputated and anti-gas serum and tetanus antitoxin were given. The diabetes mellitus was controlled with diet and 80 units of

From the Peripheral Vascular Section of the Edward B. Rolineette Foundation, Medical Clinic, Hospital of the University of Pennsylvania.

The cost of the penicillin used in this work was defrayed in part by the Donner Fund for Needy Patients.

1. MacLennon, J. D.: *Anaerobic Infections in Tripolitania and Tunisia*, *Lancet* 1: 656 (Feb. 12) 1944.

2. Power, R. W.: *Gas Gangrene with Special Reference to Vascularization of Muscles*, *Brit. M. J.* 1: 656 (May 12) 1945.

regular insulin. The 100,000 units of penicillin intramuscularly was continued daily. A culture was made on April 27 which disclosed hemolytic streptococci and staphylococci but no clostridia. A smear on April 30 disclosed gram positive rods, and there was gas on palpation in the left foot. An additional incision was made that day for drainage. The penicillin was increased to 200,000 units intramuscularly on April 30. Despite this the temperature remained elevated, the patient was toxic and the lesions were foul. As a patient had been seen in March 1945 with severe ischemia and gas gangrene who died after treatment with 100,000 units of penicillin intramuscularly daily and local surgery, it was suggested that 600,000 units of penicillin be given daily, intravenously. This was done and within twenty-four hours the temperature dropped to a lower level, remaining below 100 F. The patient received anti-gas serum twice more for a total of 60,000 units (40,000 intravenously and 20,000 intramuscularly). On May 11 and 12 continuous caudal anesthesia was instituted for periods of six hours in an effort to increase blood flow through maximal vasodilatation and thus increase the amount of penicillin reaching the infection in the ischemic tissue. The presence of pain and anxiety suggested the possibility that peripheral vasoconstriction was reducing the amount of penicillin reaching the infection. The temperature level dropped within twenty-four hours and it remained below 99 F. from May 11 to 20 and was normal thereafter. The right foot healed completely. The left foot is much improved, although additional surgery may still be necessary.

One other case pertinent to the problem is worth mentioning briefly: A man aged 65 came into the hospital with moist necrosis of the tip of the right third toe. An x-ray showed osteomyelitis of the distal phalanx of this toe. Although the patient had occlusion of the right popliteal artery, he did not complain of claudication, the foot was warm, there was no severe pain and it was evident that he had established an adequate collateral circulation. It was decided to use 300,000 units of penicillin daily, intramuscularly. After five days of treatment the necrotic tip became dry, pain subsided completely and the patient was discharged after ten days in the hospital. The feature that permitted successful treatment of this patient with penicillin intramuscularly was evidence of a good collateral circulation and absence of severe pain despite arterial occlusion in the extremity. There is more adequate blood flow to the toes of a foot with arterial occlusion where an adequate collateral circulation has been established and where this is no vasospasm than there is in the toes of some feet with a patent arterial system and reflex vasospasm due to pain, trauma or cold.

COMMENT

Failure to recognize that ordinary doses of penicillin may be inadequate in treating severe infections in ischemic tissue may be a factor in the high mortality and amputation rate in gas gangrene. Kunkel and Stead³ found that an ischemic foot may have from one third to one tenth of the normal blood supply. It would therefore seem obvious that penicillin dosage must be increased correspondingly, since only a small fraction will reach an ischemic lesion. Fortunately one can do this with penicillin, whereas this is not equally possible with the sulfonamides, which are more toxic in huge doses. Furthermore the intravenous route, using the high doses, is effective in maintaining such a high concentration that even the smaller amount of blood reaching ischemic tissue may have sufficient penicillin to be effective.

The use of massive doses of therapeutic agents in treating symptoms of ischemia is not new. In 1939 one of us⁴ pointed out that the problem in arterial occlusive disease is basically that of a block in transportation. It was found that ischemic neuritis could be relieved in some patients by the use of massive doses of thiamine hydrochloride intravenously (100 mg. daily), whereas smaller doses intravenously or subcutaneously were of no value.

Vasodilation methods such as continuous caudal anesthesia for six or eight hours will increase blood flow and thus the amount of effective penicillin. It must be remembered that ischemia of

wounds is the result not only of vascular injury but also of reflex spasm of collateral vessels in response to pain and anxiety.

The importance of early surgical removal of necrotic tissue in patients with gas gangrene has been adequately stressed by others. The use of penicillin locally is also indicated, though it is not sufficient in itself. MacLennan¹ and others have pointed out the importance of using large quantities of antisera intravenously, if possible, his patients averaging 90,000 to 100,000 units.

In 28 of MacLennan's 44 cases there was severe trauma to a major artery. Power² has stressed the vascular factor present in all military wounds with gas gangrene seen by him. In 9 of the 16 patients seen by him there was injury to the popliteal artery; in every case amputation had to be performed. He points out that vasodilatation should be encouraged by hot drinks, heat to the uninjured limbs and alcohol. Smoking should be prohibited to avoid reflex vasoconstriction. Heat is contraindicated. Increased penicillin and vasodilator therapy is indicated despite failure to find gas-forming organisms. In only half of MacLennan's cases of gas gangrene were gas-forming organisms found.

CONCLUSIONS

The present recommended dose of penicillin in gas gangrene is inadequate. The reduced blood supply does not permit an effective amount of penicillin to reach ischemic tissue at the usual penicillin blood level.

It is therefore imperative in these lesions to use much larger doses of penicillin, preferably intravenously, to increase greatly the level of penicillin in the blood reaching the necrotic tissue.

It is also important to increase blood flow simultaneously by regional sympathetic ganglion block.

These methods are to be used in conjunction with present adequate local surgical management and with repeated doses of antitoxin intravenously, if possible.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The following statement has been authorized for publication by the Council.
AUSTIN SMITH, M.D., Secretary.

INFORMATION ON NEW DRUGS

The Council office receives many inquiries concerning the status of drugs newly introduced in commerce and those which are still in the stage of experimental investigation. On the basis of the information which is available in the Council files and that received from consultants to whom the Council may write, these inquiries are answered. However, to give the best information service it is necessary to have the cooperation of those who are responsible for the introduction and distribution of new drugs, and it is important that such information is received as promptly as possible. Manufacturers and others are urged to keep the Council office informed concerning new developments relating to products in which they are interested. At the same time they should of course notify the Council office if there is any restriction on the information, as such restriction will be observed. Ordinarily it is necessary to transmit a digest of the information only when replying to inquiries, but it should be understood that the Council must be free to comment on the supplied data if the occasion arises for such comment; while these comments would aim to be unbiased, they may on occasion be adverse because, for example, of the lack of evidence to support the claims or implied uses. Nevertheless, the end result would be more complete information and a better understanding of the problems involved. Every one participating in the accumulation of this information would benefit. Manufacturers are invited to keep the Council informed; at the same time members of the medical profession and others with similar interests are also invited to make use of the information available in the Council files. Inquiry may be directed simply to the Secretary of the Council on Pharmacy and Chemistry, in care of the American Medical Association, 535 North Dearborn Street, Chicago 10.

3. Kunkel, P., and Stead, E. A., Jr.: Blood Flow and Vasomotor Reactions in Foot in Health, in *Arteriosclerosis and in Thromboangiitis Obliterans*, J. C. Meyer: The Use of Vitamin B₁₂ in Rest Pain of Ischemic Origin, *Am. J. M. Sc.* 197: 766 (June) 1939.

Council on Foods and Nutrition

The Council on Foods and Nutrition has authorized publication of the following report.

GEORGE K. ANDERSON, M.D., *Secretary.*

THE EFFECT OF COCOA ON THE UTILIZATION OF DIETARY CALCIUM

H. H. MITCHELL, PH.D.

AND

JANICE M. SMITH, PH.D.

URBANA, ILL.

Cocoa is one of many foods commonly used in American diets that contains moderate amounts of oxalic acid, i. e. 0.5 to 0.6 per cent. On a similar moisture basis, cocoa contains about the same content of oxalic acid¹ as wax beans and gooseberries, slightly more than green beans, carrots and the peelings of citrus fruit, but slightly less than celery stalks. The oxalic acid of foods is capable of forming an extremely insoluble salt with dietary calcium, and for this reason it may impair the utilization of the calcium of foods in the body. Since cocoa and chocolate are used extensively in milk and ice cream, the possibility that the calcium of these dairy products would thus be rendered less available in digestion and metabolism induced Mueller and Cooney of the Massachusetts State College to study the problem with growing rats. The results of this investigation were published about two years ago² and have attracted wide interest among nutritionists³ and particularly within the dairy industry, since chocolate flavors in milk and ice cream have been introduced evidently in response to a consumer demand and may be presumed to increase the consumption of these excellent foods.

The experiments of Mueller and Cooney were designed to compare the retentions of calcium in the bodies of growing rats receiving a diet containing 0.554 per cent of calcium and 0.472 per cent of phosphorus derived from whole milk powder when this diet was fed alone and when it was supplemented with cocoa in the proportion of 0.84 part of the basal diet to 0.16 part of cocoa. Twenty-one pairs of rats were used in addition to 21 litter-mate control rats killed and analyzed at the beginning of the experiment to permit an estimate of the initial stores of calcium. Within each pair of rats the consumption of the basal diet was equalized, while 1 of the pair received the cocoa powder in addition. After five weeks of feeding the rats were killed and analyzed for calcium and phosphorus.

The results of this well conceived and well executed experiment were clearcut in their significance as revealed by statistical analysis.⁴ The rats fed the cocoa supplement, although receiving 19 per cent more dry food, 6 per cent more calcium and 30 per cent more phosphorus than the rats on the basal diet only, grew only 89 per cent as fast and deposited in their bodies only 76 per cent as much calcium and 80 per cent as much phosphorus. The effect of the cocoa supplement

on growth had been previously⁵ shown by Mueller⁴ to be traceable probably to its content of tannic substances. The primary effect on mineral utilization was probably on calcium, since (1) calcium was presumably a limiting factor in the diet, (2) calcium limitation will restrict phosphorus utilization because the two minerals are so largely utilized together as a calcium phosphate in bone formation, and (3) the depression of phosphorus retention by cocoa was so nearly the same as that of calcium retention. However, the oxalic acid content of the cocoa could account for only about one third of the observed depression in calcium retention. No clue to the residual causes of this depression was afforded by the data of the experiment or the discussion of them by the authors. It should be noted that the ratio of milk solids to cocoa in the diets of this experiment was about 3.3 to 1, while in chocolate milk it is ordinarily about 13 to 1.

The cocoa that Mueller and Cooney used was a low cost American process cocoa⁵ containing 11.23 per cent fat and 5.25 per cent fiber. Cocos of this description are common at times on the market, being used in the manufacture of bakery goods and for low cost chocolate syrups and confections, though there seems to be a considerable sale of such products for domestic use by certain retail stores throughout the country.

Similar experiments were made on growing rats at the University of Illinois, essentially the same technic being used as that employed by Mueller and Cooney, but three different kinds of cocoa being studied, i. e. the low cost brand used by the Massachusetts investigators (cocoa A), an American process breakfast cocoa (cocoa B) and a Dutch process cocoa (cocoa C). The latter two cocos were medium cost cocos containing 22 to 24 per cent of fat and 3.6 to 3.9 per cent of fiber. In the Illinois experiments the cocos were incorporated into the basal diets at the expense of sugar instead of being added to the diets, and all diets were equalized in fat content. Nine and twelve pairs of rats were used in each of two tests, and pair mates received equal amounts of their respective diets. However, the body weight gains of pair mates were equalized by additions of sugar to the diet of the laggard rat, which was generally the rat receiving cocoa. The experiments were terminated after four to nine weeks of feeding, depending on the rate of growth in each pair, and the carcasses were analyzed for calcium and, in one test, for phosphorus also.

The amount of extra sugar required to maintain equal gains in the cocoa and noncocoa rats, in percentage of the basal food consumed, averaged 18.3 for cocoa A, 6.1 for cocoa B and 4.6 for cocoa C. The difference in this respect between the low cost cocoa A and the higher cost cocos is highly significant statistically. The calcium retentions of the rats on the three cocoa diets, expressed as percentages of intakes of calcium, showed depressions of 27.7, 14.8 and 18.4 per cent as compared with the control rats receiving no cocoa. Again the detrimental effect of the low cost cocoa A exceeded statistically the effect of the two medium cost cocos B and C, which were not statistically distinguishable in this respect. The three cocos contained essentially the same contents of oxalic acid, 0.55, 0.50 and 0.51 per cent respectively. The depressing effect of the B and C (medium cost) cocos on calcium retention can be entirely accounted for by their contents of oxalic acid, but as in the work of Mueller and Cooney, only about

From the Division of Animal Nutrition, and the Department of Home Economics, University of Illinois.

1. Kohman, E. F.: Oxalic Acid in Foods and Its Behavior and Fate in the Diet, *J. Nutrition* **18**: 233 (Sept.) 1939.

2. Mueller, W. S., and Cooney, M. R.: The Effect of Cocoa on the Utilization of the Calcium and Phosphorus of Milk, *J. Dairy Sci.* **26**: 951, 1943.

3. Editorial Review: Availability of Calcium and Phosphorus in Chocolate Milk, *Nutrition Rev.* **2**: 68 (March) 1944.

4. Mueller, W. S.: The Significance of Tannic Substances and Their Bromine in Chocolate Milk, *J. Dairy Sci.* **25**: 221 (March) 1942.

5. Personal communication to the authors.

one third of the depression in calcium retention induced by the low cost cocoa A can be so explained.

The chemical (and physical) analysis of the three cocoas does not afford any direct explanation for the more harmful effect of cocoa A as compared with cocoas B and C. Besides the chemical data already given, our analysis indicates the percentages given in the accompanying table.

The higher proportion of cacao shell⁶ and possibly the lower proportion of fat⁷ may be involved in the greater detrimental effect of the low cost cocoa A, with reference both to growth and to calcium utilization.

The experiments on rats at the University of Illinois were carried out in conjunction with a series of experiments⁸ on 7 women students (ranging in age from 18 to 22 years), extending over fifty-one four day calcium balance periods. A low calcium basal diet containing an average of 225 mg. of calcium per day and no cocoa was fed alone in thirteen four day periods, supplemented with cocoa in six periods and supplemented with dairy products (milk and ice cream) and cocoa in thirty-two periods. In the latter periods adjustments were made in the basal diet at the expense of low calcium foods to maintain a fairly constant intake of protein and of calories. The cocoa used in these experiments was an American process cocoa of medium cost, manufactured by the same firm and similar in composition to the cocoa B in the rat studies, except for a somewhat lower fat content,

Analysis of Three Cocoas

	Tannic Substances, %	Theobromine, %	Moisture, %	Proportion Not Passing Through a 140 Mesh Sieve, %
Cocoa A.....	11.80	2.10	5.73	11.51
Cocoa B.....	10.57	1.79	4.70	1.12
Cocoa C.....	6.62	1.44	5.20	0.87

20.22 per cent. This cocoa represents approximately the quality normally used in making dairy syrups for the manufacture of chocolate milk and ice cream. In the supplemented diets the calcium intake was raised to about 700 mg. daily, of which dairy products, milk or milk and ice cream, supplied about 71 per cent. The cocoa was added to the diets in amounts varying from 5.5 Gm.⁹ to 34.8 Gm. daily and, in the different diet periods, it was incorporated in milk alone, in ice cream, in cookies, in candy or in syrup. For each type of diet with reference to cocoa dosage and manner of incorporation in the foods, each subject during half of the period received cocoa and during the other half of the period received none. Hence, for each of the four diets, comparisons of calcium retention were possible between subjects and between periods on the same subject.

The results of the experiments on human subjects were essentially negative in their significance in the sense that no deleterious effects on calcium metabolism of this particular brand of cocoa in the amounts consumed were revealed. For all periods and subjects, the calcium balances on the cocoa diets averaged — 9.74 mg. per day and on the noncocoa diets — 12.37 mg. per day,

the difference being insignificant statistically. The calcium intakes on the cocoa and noncocoa diets averaged very nearly the same, 604 and 590 mg. per subject daily respectively. Among twenty-seven comparisons of calcium balances involving each subject on each diet, with and without cocoa, sixteen favored the cocoa diet and eleven the noncocoa. The deviation of 2.5 from the ideal outcome of 13.5 if random factors alone operated is somewhat less than the standard deviation of twenty-seven events, each of which, with equal probability, may result in either of two ways, i. e. $\sqrt{0.5 \times 0.5 \times 27} = 2.6$. Hence such a deviation may well have resulted from chance only. An application of the analysis of variance to each diet comparison confirmed the essentially negative significance of the data.

These negative results may mean that in human subjects the cocoa used has no effect on calcium utilization. On the other hand, they may mean that the method of study is not sufficiently sensitive to detect an effect of cocoa because of the variation among the data within diet periods and within subjects due to uncontrolled factors. A statistical analysis of this variation showed that for all four diet periods the variation was such that average differences of 116, 57, 145 and 25 mg. respectively in calcium balance per subject daily induced by a dietary factor such as cocoa would have been detected with a probability of 0.05. This means that the uncontrolled intraperiod and intragroup variation would be expected to produce an average difference in calcium balance of these magnitudes (or greater) only once in twenty trials. With the final low calcium diet, which was unsupplemented with cocoa for twelve days for each subject and supplemented with 21 Gm. of cocoa daily for an adjacent twelve day period, the uncontrolled variation was so much less than with that of the other diets that an average difference in calcium balance of only 25 mg. could have been detected with a probability of 0.05: Twenty-one Gm. of cocoa contains 105 mg. of oxalic acid, capable of combining with 46 mg. of calcium. On the other hand, 21 Gm. of cocoa itself contains 30 mg. of calcium, enough to combine with two thirds of the oxalic acid contained in it. In another diet period in which the critical difference in calcium balance detectable at the 5 per cent probability level was 57 mg., the daily cocoa supplement amounted to 1 ounce (28.35 Gm.) and contained 142 mg. of oxalic acid, sufficient to combine with 63 mg. of calcium. In this case the cocoa supplement contained 41 mg. of calcium, leaving an excess of oxalic acid sufficient to combine with only 22 mg. of calcium contained in the basal foods. These calculations illustrate the difficulty of detecting the effect of cocoa on calcium metabolism in the human being if the effect is due entirely to the oxalic acid contained in it.

Any discussion of the possible effect of cocoa on the utilization of dietary calcium in the human organism should consider the possibility that calcium oxalate is considerably more efficiently utilized in the human organism than in the body of the rat. The rat has been shown¹⁰ to be almost completely incapable of utilizing calcium oxalate or the calcium of spinach, a vegetable containing more than enough oxalic acid to combine with its content of calcium. That the human body utilizes the calcium of spinach to a considerable extent is indicated clearly by the experiments of

6. Millat, L.: Toxicité des coques de cacao et influence de celle-ci sur la toxicité de la caféine. *Compt. rend. Acad. d. sc.* 213: 591, 1941.

7. Neumann, R. O.: Die Bewertung des Kakao als Nahrungs- und Genussmittel: Experimentelle Versuche am Menschen. *Arch. Hyg.* 58: 1, 1906.

8. These experiments as well as the rat feeding experiments were aided by funds granted to the University of Illinois by the National Dairy Council on behalf of the chocolate industry and the International Association of Ice Cream Manufacturers.

9. The amount of cocoa contained in 400 cc of chocolate milk containing 1.4 per cent of cocoa. Incidentally this amount of cocoa, 5.5 Gm., approximates the average daily consumption in this country.

10. Fairbanks, B. W., and Mitchell, H. H.: The Availability of Calcium in Spinach, in Skim Milk and in Calcium Oxalate. *J. Nutrition* 16: 79 (July) 1938.

McLaughlin¹¹ and of Fincke and Garrison.¹² The experiments of Bonner and others¹³ on children failed to detect an adverse effect on calcium utilization of 100 Gm. daily portions of canned spinach or of an amount of oxalic acid, 700 mg., contained in such portions. It is true that the calcium intake in these experiments, ranging from 800 to 1,300 mg. daily, was liberal for these subjects, but the oxalic acid doses used were capable of combining with over 300 mg. of calcium. Even so, the fecal excretion of calcium, which presumably would include the calcium oxalate thus formed, was only inconsiderably increased by an average of 28 mg. daily in the spinach periods and of 42 mg. in the oxalic acid periods.

On other grounds also the effect on calcium retention of oxalic acid, or any other agent capable of immobilizing calcium in the alimentary canal, would be much greater in the rat than in the human being. The rat is able to utilize non-oxalate calcium to a much greater extent than is man, and hence the precipitation of a given weight of calcium in the intestine by oxalic acid has a much greater effect on the calcium economy of the body. In the Illinois experiments on rats the calcium intake was retained to the extent of 89 per cent on the average by the animals on noncocoa rations. Hence the immobilization of 100 mg. of dietary calcium by the oxalic acid of cocoa would be expected to depress calcium retention by 89 mg. However, in the experiments on women the sparing effect of dietary calcium on body calcium averaged about 19 per cent, in agreement with many other tests reported in the literature. In this case the immobilization of 100 mg. of dietary calcium by oxalic acid would reduce calcium retention by only 19 mg.

An interesting finding in the experiments on human subjects reported here in a preliminary way was that the tolerance limit for cocoa was about 1 ounce daily. Larger portions induced headache, nausea and impaired appetite. To consume the equivalent of 1 ounce of cocoa containing 20 per cent fat in the form of sweet chocolate prepared with the minimal proportion of chocolate liquor, 15 per cent,¹⁴ one would have to consume approximately 12 ounces. A detailed report of both the rat and the human experiments will be published elsewhere.

CONCLUSIONS

In the growing rat, two medium cost cocoas containing about 22 per cent of fat depressed the utilization of calcium in proportion to their content of oxalic acid. A low cost cocoa containing about 11 per cent fat and apparently appreciably more cacao shell depressed growth more than the higher grade cocoas and depressed calcium retention about twice as much as can be accounted for by its content of oxalic acid.

In adult human subjects, whether subsisting on a low calcium diet or on diets of borderline calcium adequacy, a medium cost cocoa in daily portions of 21 to 38 Gm., approximating the tolerance limit, was not shown to affect the calcium balance adversely.

However, if the effect of such cocoas on calcium utilization resides entirely in their content of oxalic acid, as the rat experiments indicate, it would not be expected

to be appreciable in human metabolism, because the oxalic acid content of cocoa is only moderate, i. e. 0.5 to 0.6 per cent, and the calcium in the cocoa itself is sufficient to combine with about two thirds of the oxalic acid. Furthermore, the immobilization of milk calcium in the digestive tract by the remaining third of the oxalic acid of cocoa, equivalent to 22 mg. of calcium for a 1 ounce portion of cocoa, would be expected to depress calcium retention by only one fifth of this amount (4 or 5 mg. of calcium), because of the poor utilization of calcium (19 per cent or so) by the adult human organism. Such a small depression in calcium retention is practically impossible to detect by the technic of the metabolism experiment with human subjects.

The effect of low cost, low fat (dry) cocoas, rather commonly used in this country at times, should be tested on human subjects with reference to tolerance and to calcium utilization, since with these cocoas other constituents than oxalic acid may depress the utilization of dietary calcium.

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

GEORGE K. ANDERSON, M.D., Secretary.

CANNED AND DRIED FRUITS AND FRUIT PRODUCTS (See Accepted Foods, 1939, p. 70).

Florida Citrus Cannery Cooperative, Lake Wales, Fla.

DONALD DUCK, PRICELESS BRAND AND SEALDSWEET BRANDS CONCENTRATED ORANGE JUICE The freshly squeezed juice is concentrated under a high vacuum and then filled hot into cans, which are sealed, flash pasteurized at 200 F. and then held in 40 F. storage

Analysis (submitted by manufacturer).—Moisture 35.0%, total solids 65.0%, acid (as citric) 5.0%, invert sugar 25.0%, total sugar 50.0%, protein (N \times 6.25) 4.3%, pectin 0.3%, volatile oil 0.0025%, ascorbic acid 215 mg., phosphorus 120 mg., potassium 1,600 mg., calcium 80 mg., magnesium 78 mg., manganese 0.14 mg., iron 0.1 mg., aluminum 0.3 mg. per hundred cubic centimeters, specific gravity 1.318

Calories—In the concentrate, 2½ per gram In the diluted product, ½ per gram

Vitamins—Ascorbic acid (titration method) in juice reconstituted with six volumes of water contains not less than 40 mg. per hundred cubic centimeters

PREPARATIONS USED IN THE FEEDING OF INFANTS (See Accepted Foods, 1939, p. 156)

Harold H. Clapp, Inc., Rochester, N. Y.

CLAPP'S JUNIOR FOODS PEARS, consisting of pears and sugar.

Analysis (submitted by manufacturer).—Total solids 16.27%, crude fiber 1.26%, protein (N \times 6.25) 0.30%, ash, 0.23%, fat (ether extract) 0.05%, carbohydrate (by difference) 14.43%, phosphorus (P) 9.6 mg. per hundred grams, calcium (Ca) 8.7 mg. per hundred grams, iron (Fe) 0.7 mg. per hundred grams, copper (Cu) 0.11 mg. per hundred grams

Calories—16.7 per ounce; 0.59 per gram

Vitamins—Ascorbic acid 3.6 mg. per hundred grams, riboflavin 0.025 mg. per hundred grams

Heinz Company, Pittsburgh.

HEINZ STRAINED APRICOTS WITH OATMEAL contains fresh apricots, oat flour, sugar and water.

Analysis (submitted by manufacturer).—Total solids 25.79%, total sugar as sucrose 19.11%, acidity as citric 0.42%, protein (N \times 6.25) 0.90%, fat (by acid hydrolysis) 0.28%, crude fiber 0.61%, ash 0.37%, salt 0, total carbohydrates other than crude fiber by difference 23.21%, calcium 10.0 mg. per hundred grams, phosphorus 22.0 mg. per hundred grams, iron 0.5 mg. per hundred grams, copper 0.11 mg. per hundred grams, lead 0.06 mg. per hundred grams (0.0042 grains per pound), arsenic 0

Calories—0.99 per gram, 28 per ounce

Vitamins—

	I U/100 Gm.	Mg./100 Gm.
Carotene	2,109	
Thiamine . . . . .	.....	0.039
Riboflavin . . . . .	.....	0.017
Ascorbic acid . . . . .	.....	3.45

11 McLaughlin, L. Utilization of the Calcium of Spinach, J. Biol. Chem. 74: 435, 1927.

12 Fincke, M. L., and Garrison, E. A. Utilization of Calcium of Spinach and Kale, Food Res. 3: 575, 1938

13 Bonner, Priceless, Hummel, Frances C.; Bates, Mary F.; Horton, James; Hunscher, Helen A., and Mac, J. G. The Influence of a Daily Serving of Spinach or Its Equivalent in Oxalic Acid on the Mineral Utilization of Children, I. Pediatr. 12: 155, (Feb.) 1938

14 U. S. Federal Register 9: 14335 (Dec. 6) 1944

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SATURDAY, NOVEMBER 24, 1945

THE NATIONAL HEALTH PROGRAM— THE PRESIDENT'S MESSAGE

In the Organization Section of this issue of THE JOURNAL appears the complete text of the message of President Harry S. Truman to the Congress, delivered on November 19. The text was received as THE JOURNAL was going to press. The President presents a five point program. The measures proposed by the Hill-Burton bill for increased funds for hospitals and health centers throughout the nation are covered by his first point. The American Medical Association has approved the principles of the Hill-Burton bill subject to safeguards which are in the text reported by the committee which conducted hearings on this measure.

The second recommendation of the President is for expanded maternal and child health services—essentially those proposed by the Pepper bill. It should be apparent that the passing of a nationwide compulsory sickness insurance bill ought to make unnecessary the kind of proposals included under the Pepper Maternal and Child Health measure.

The President urges increased funds for medical education to be given to public and nonprofit institutions for extending medical education and particularly for research in the fields of cancer and mental health. Obviously this proposal is duplicated to some extent by the proposals for the National Science Foundation. This proposal would place the federal government definitely in control of medical education throughout the United States through its ability to allocate funds to medical educational institutions.

The fourth proposal is for a nationwide system of compulsory sickness insurance to cover every man, woman and child in the United States and to care for the indigent through insurance policies purchased by local agencies for which they would be reimbursed in whole or in part by the federal government. The American Medical Association has opposed compul-

sory sickness insurance consistently for many years. The President reaffirms Senator Wagner's peculiar interpretation of the term socialized medicine by claiming that "this is not socialized medicine." The affirmation will not be convincing to the physicians of the United States who would be compelled to submit to politically controlled medicine should such a measure ever become the law of the nation.

Finally, the President urges compensation of workers for disability due to illness. The House of Delegates of the American Medical Association has approved such proposals in the past.

Fortunately the House of Delegates of the American Medical Association is scheduled for a session to be held in Chicago, December 2-6. The House of Delegates will no doubt at that time state officially the point of view of the American Medical Association on the President's proposals.

THE PELLAGRA PROBLEM

The discovery that a deficiency of niacin is directly related to the development of pellagra in man and blacktongue in dogs has not completely clarified the etiology of these conditions. For example, the relatively high incidence of pellagra in maize-eating populations is not entirely thus explained, since corn contains approximately the same amount of niacin as many other foods, such as eggs, milk and oats.¹ Also the early observations of Goldberger and his associates that various protein foods and, indeed, the amino acids tryptophan and cystine exert some beneficial effect in human pellagra indicates that factors in addition to niacin may be involved.

The results of recent experimental studies on the pellagra problem appear to be valuable in elucidating these two puzzling questions. Blacktongue, the canine counterpart of pellagra in man, cannot be produced in dogs by a niacin low synthetic diet adequate in all other respects unless corn grits is added.² The effect of corn grits can be nullified by the addition of niacin.³ Even the rat, a species notoriously resistant to lack of niacin, will show inhibition of growth when corn grits is added to the ration.⁴ The effect is nullified by niacin, as in the dogs, or by increasing the protein intake. The most recent contribution to the problem⁵ demonstrates that the addition of the amino acid tryptophan alone

1. Tepley, L. J.; Strong, F. M., and Elvehjem, C. A.: J. Nutrition **23**: 417 (April) 1942.

2. Handler, Philip: Proc. Soc. Exper. Biol. & Med. **52**: 263 (April) 1943.

3. Krehl, W. A.; Tepley, L. J., and Elvehjem, C. A.: Proc. Soc. Exper. Biol. & Med. **58**: 334 (April) 1945.

4. Krehl, W. A.; Tepley, L. J., and Elvehjem, C. A.: Science **101**: 283 (March 16) 1945.

5. Krehl, W. A.; Tepley, L. J.; Sarma, P. S., and Elvehjem, C. A.: Science **102**: 489 (May 11) 1945.

will likewise counteract the effect of corn grits, thus confirming experimentally an observation made long ago in pellagrins by Goldberger.⁶

A published explanation of the apparent synergistic relationship between tryptophan (and protein) and niacin, on the one hand, and the antagonistic effect of corn, on the other, is not yet forthcoming. However, the suggestion⁶ that the synthesis of niacin by the intestinal flora may be involved appears logical. According to this view the addition of corn grits may decrease the number of niacin synthesizing micro-organisms in the intestinal flora and thus lessen the amount of niacin available to supplement an inadequate niacin intake. The addition of tryptophan or protein, on the other hand, may favor an increase of the niacin synthesizing organisms and thus nullify the effect of corn. The fact that the proteins of corn are comparatively low in tryptophan may also be a related factor. Further studies on this important problem will be awaited with interest.

RECONVERSION OF THE 9-9-9 HOUSE OFFICER PROGRAM

The Procurement and Assignment Service has now announced its program for reconversion of the 9-9-9 program (see page 878, this issue). The Army and Navy have agreed to the plan. The present interns, most of whom will complete nine months of internship about April 1, 1946, will be permitted to continue the internship until July 1, 1946. Should hospitals be unable to accommodate these men plus the new interns who will commence their appointments about April 1, those who hold commissions and have completed their nine months of intern training will be ordered to active duty. New interns appointed April 1, 1946 will be allowed to continue until July 1, 1947, by which time most medical schools hope to be graduating classes annually every June.

Commissioned officers who are serving as junior or assistant residents will be called on completion of their eighteen months of hospital work about April 1, 1946 and (senior) residents completing twenty-seven months will also be called at that time. Exceptions will be made in the deferment of commissioned officers to a second or third nine months hospital appointment only rarely, in "cases in which their services are absolutely essential" and "the Procurement and Assignment Service and the Surgeons General are convinced that every effort to obtain the services of veterans, physically disqualified or otherwise ineligible men or of women has been made."

The primary purposes of this plan are (a) to begin moving toward a peacetime status of twelve months internships commencing each July, while still providing replacements for the Army and Navy and (b) to pro-

vide more residency positions for returning physician veterans who are and will be seeking such training in large numbers. Hospitals are urged to "begin at once to appoint veterans to every staff position so that, with rare exception, every military resident can be called to active duty not later than April 1, 1946." As soon as a veteran is adequately trained to replace a commissioned officer resident, that resident will be called to active duty even before April 1, 1946. Hospitals are again reminded that veterans do not count on their house officer quotas. These regulations should be studied with care by all concerned.

The Army apparently proposes to continue the A. S. T. P. in medical schools if Congress allocates funds and to require medical schools to continue the accelerated program even though relatively few A. S. T. P. students will remain in school. Should the Army persist in this unreasonable program, the plans of several medical schools to provide special work for physician veterans next spring or summer cannot be consummated. Furthermore, medical school calendars will be disoriented with the house officer program outlined by the Procurement and Assignment Service and inordinate confusion will result. The Army cannot justify a continuation of acceleration in medical schools desiring to decelerate, and the schools should refuse to accede to the demand.

The foregoing represents the new policy of the Procurement and Assignment Service and the Surgeons General of the Army and Navy. Unfortunately, other existing Army regulations are in conflict with the commendable purpose and successful operation of this plan.

RESTLESS LEGS

Axel Ekblom¹ reports a "hitherto virtually unknown disease which, because of its prevalence and the torment it causes in severe cases, is of great practical importance." The symptoms seem to be purely subjective and consist of peculiar paresthesias, a feeling of weakness in the legs and a sensation of cold in the feet. The paresthesias are the most characteristic signs of the disease and are therefore important for the diagnosis. They are experienced over the inner aspect of the legs, sometimes in the thighs but rarely in the feet. The arms may be involved. The patients have difficulty in clearly defining this sensation and refer to it most frequently as "crawling." Characteristically, the sensation develops only when the legs are still, most often after the patient retires for the night. For relief the patients move their legs continually or get up and walk about. Their sleep may be disturbed night after night for years with periods of improvement and exacerbation. In its most severe form the disease cause-

6. Goldberger, Joseph, and Tanner, W. F.: *Pub. Health Rep.* 37: 2 (March 5) 1922; 39:37 (Jan. 18) 1924; 40:54 (Jan. 9) 1925.

1. Ekblom, K. A.: *Restless Legs*, *Acta med. Scandinav.*, supplement 158, 1945.

great suffering. The disease or syndrome occurs in two main forms: one characterized entirely or mainly by paresthesia and termed by the author "asthenia crurum paraesthetica" and the other, in which pain predominates and which the author calls "asthenia crurum dolorosa." The author uses the term "restless legs" for both groups. The author encountered the condition 18 times among 4,259 persons, 2,411 men and 1,848 women, who visited the neurologic outpatient service of the Serafimer Hospital, Stockholm, during the year 1944. Altogether the author observed, between 1943 and 1945, 34 moderately severe and severe cases of asthenia crurum paraesthetica, 15 cases of the asthenia crurum dolorosa and 65 cases in which the symptoms were so mild that they did not require any treatment.

The paresthetic variety is an easily recognizable condition, probably closely related to acroparesthesia and nocturnal burning feet. The painful variety consists of mild to moderate aching localized in the same situations as the paresthesia. The condition is often worse when the patient is resting and forces him to move his legs. Generally speaking, continuous paresthesia points to an organic lesion of the nervous system, while intermittent paresthesia of the type described in this syndrome points to a functional disorder possibly of vasomotor nature. The author's experience with two vasodilating drugs (Doryl, Merck, carbaminoylcholine chloride and Priscol, Ciba, benzylinimidazolin hydrochloride) lend further support to the vasomotor theory of the condition. However, the author admits that the part which the treatment played in the improvement in the long run is difficult to determine.

A description of a similar syndrome was given by Wittmaack in 1861. This author referred to a condition described by older physicians as "anxietas tibiarum." The only other reference is to be found in an article published by Allison² in 1943 in which he speaks of "leg jitters" as a common minor ailment which he had never seen described. According to Allison the patients experience "a curious, unlocalized, restlessness in one or both legs. It is not quite a pain but is distinctly unpleasant. Massage has no effect, but getting up and walking about may give relief. The disagreeable sensation stops at once on chewing $\frac{1}{100}$ grain of nitroglycerin, suggesting that the cause is vascular."

Ekbom believes that the reason why this syndrome of anxietas tibiarum has been forgotten is that the interest of the neurologists more recently has been centered on neuroses, the psychologic background receiving main attention. Little interest was paid to the clinical features of paresthesias during the twentieth century. The tendency is to label conditions with unusual symptoms as "hysteria," "psychoneurosis," "psychic pain" and the like.

Current Comment

APTITUDE TESTS FOR VOCATIONAL GUIDANCE

Tests for the appraisal of aptitudes and interests of high school students, with special reference to education and choice of a vocation, have achieved wide recognition. Certainly much useful information can be derived from the competent use of psychologic tests and of interest schedules. Tests of this kind have been used extensively by the military forces. There is good scientific evidence favoring the use of tests, but they must be given by people who know their interpretation and limitations. Unfortunately there are many promoters who advertise counseling services together with tests who do not themselves have technical competence in their use. These are probably the very men who come to the attention of the public more than those who are really qualified to give and interpret the tests properly. In differentiating between those who are competent it is useful to ask the qualifications of the senior man or owner of a firm that advertises such services. If he is himself a member of the American Psychological Association and if his examiners are also so qualified, one can assume that the services are reasonably satisfactory. A useful procedure is to make inquiry with the department of psychology in the nearest college. Such inquiry will usually bring information about the capable people in the locality. The value of vocational guidance is unquestionable but is definitely limited by the training of those performing the tests. Furthermore, aptitude testing cannot be considered infallible and must be viewed as subject to modification as the result of continued experience.

CHEMOTOXIC MENTAL DISEASE

Interest in mental diseases has increased because of new problems associated with the war. Mental patients occupy a larger number of beds in institutions than any other group of special patients, and for a longer period. Mental disease may be directly or indirectly related to infection (syphilis, encephalitis, malaria), endocrine disorders (pregnancy, thyrotoxicosis), cerebral arteriosclerosis and to various toxic chemicals. Undoubtedly the importance of chemotoxic factors is increasing on account of industrial developments, medicinal trends and habits associated with the war effort. The proper recognition of causal relations between neurotoxic chemicals and mental disorders becomes, therefore, more and more important for their control. Mental diseases may follow the chronic use of morphine, cocaine, marihuana, bromides, alcohol and occasionally barbiturates. Poisoning with nitrous oxide, potassium thiocyanide,¹ atabrine and sulfonamides² may also lead to

2. Allison, F. G.: *Obscure Pains in the Chest, Back or Limbs*, *Canad. M. A. J.* 48: 36 (Jan.) 1943

1. Solomon, J.; Greenblatt, M., and Coon, G. P.: *Toxic Symptoms and Death Associated with Potassium Thiocyanate Therapy*, *New England J. Med.* 229: 241 (Aug. 5) 1943.
2. Little, S. C.: *Nervous and Mental Effects of the Sulfonamides*, *J. A. M. A.* 119: 467 (June 6) 1942.

serious and sometimes prolonged psychotic episodes. Generally less appreciated is the psychotic action of several chemicals extensively produced and used in industry and in part sold to the public as constituents of finished products. Carbon monoxide,³ carbon disulfide,⁴ manganese, nicotine, lead and lead compounds, especially the volatile aliphatic compounds, mercurials, particularly the volatile alkyl derivatives,⁵ and organic nitrites are examples. These chemicals have caused many accidental or occupational poisonings associated with transitory or permanent mental disorders. The action of some of these substances on the nervous system is insidious. Thus diethyl mercury and dimethyl mercury salts, which are used as fungicidal dressings for seed grain, may produce nervous symptoms only some weeks or months after exposure without causing at the same time manifestations of typical mercury poisoning. A similar specific neurotropic action is displayed by tetraethyl lead, which produces cerebral symptoms because of its fat soluble properties. Close or prolonged contact with these agents may lead to permanent and progressive psychotic conditions.

THE TIME THAT PHYSICIANS SPEND WITH PATIENTS

Several efforts have been made to estimate the number of physicians necessary to supply satisfactorily medical care to a community by determining the amount of time required to care for patients. A recent report¹ states the time spent on their patients by six physicians engaged in private practice in a war industry area in 1944. The six physicians held office hours on a rotating schedule in two war housing projects. They held 318 office periods, comprising 1,602 patient visits, during the first three months of 1944. The average amount of time spent per patient by the six physicians varied widely—from 12.2 to 21.3 minutes; as more patients were seen during a specific office period the amount of time per patient decreased, thus representing a speed-up in the work of the physician. This suggested to the investigator that the physician is generally "aware of the number of patients waiting to see him and tended to adjust the speed of his work accordingly." The average time spent by six physicians in two war housing projects in seeing their patients cannot possibly give a true index of the adequacy of the medical care or the number of physicians which are necessary to care for the needs of any other population group. Patients differ enormously in the amount of care needed, not only between patient and patient, but between the same patient on different occasions. Different physicians also do not work with the same speed or efficiency. Indeed, there are so many factors involved—

nature of disease, talkativeness of patient or doctor, procedures attempted in single visit, nature of the communities, conditions of practice and the like—that these averages are quite meaningless. The only criterion which can satisfactorily meet the ideals of the medical profession involves the expenditure of as much time by the physician for each patient as is necessary to make a correct diagnosis and to institute the best available therapy on that patient. Even though this ideal is not always attained, even in the practices of physicians in housing projects, physicians generally cannot accept any yardstick that might interfere with this objective.

SHORTAGE OF PENICILLIN

Apparently a definite shortage of penicillin for injection prevails in many places, and physicians are asking the reason for this shortage. A number of factors have produced the present short supply. Included are strikes, difficulty in maintaining production because of contamination during fermentation, increased export, the use of poor quality corn steep liquor and the manufacture of penicillin mixtures. Steps are being taken to overcome the penicillin shortage. Export controls have been suggested to permit records of the quantity of penicillin leaving the United States. Directives giving hospitals first call on penicillin production have also been proposed. A higher grade of corn steep liquor is being sought. Another step which should be undertaken by the manufacturers until the present shortage is alleviated is the discontinuance of doubtfully acting mixtures. Penicillin for injection purposes is truly a life-saving measure and its distribution should be given priority over the manufacture and distribution of over-the-counter items of less value. Judging from letters and telegrams that have come to the headquarters of the American Medical Association, resentment is developing among physicians unable to secure this product for serious cases of disease.

YEAST AS FOOD

Attention has been called¹ to the manifold ways in which micro-organisms have been useful to man. Such processes as the curing of cheese, leavening of breads and fermentation of wines employ the peculiar metabolic activity of the yeast, mold or bacteria concerned; during the recent war the practicability of using the micro-organism itself as a food has been demonstrated, notably with yeast. Postwar needs for nutriment have led the British government to stimulate the production of yeast in Jamaica and in other islands of its British West Indies where sugar cane can be grown.² The yeast isolated from sugar cane is not only a rich source of protein of high biologic value but also contains all of the B vitamins and, if present plans mature, should provide these dietary essentials at relatively low cost. By thus utilizing the natural resources of these islands, progress may be made in combating the poverty so long associated with this region.

3. Sanger, E. B., and Gilliland, W. L.: Severe Carbon Monoxide Poisoning with Prolonged Coma, *J. A. M. A.* **114**: 324 (Jan. 27) 1940.

4. Braceland, F. J.: Mental Symptoms Following Carbon Disulfide Absorption and Intoxication, *Ann. Int. Med.* **16**: 246 (Feb.) 1942.

5. Kocisch, F.: Gesundheitsschädigungen durch organische Quecksilberverbindungen, *Arch. f. Gewerbepath. u. Gewerbehyg.* **5**: 113, 1937.
Hill, W. H.: A Report of Two Deaths from Exposure to the Fumes of di-Ethyl Mercury, *Canad. J. Pub. Health* **34**: 158 (April) 1943.
Hunter, D.; Bomford, R. R., and Russell, D. S.: Poisoning by Methyl Mercury Compounds, *Quart. J. Med.* **9**: 193 (July) 1940.

1. Davis, Burnet M.: A Note on Physician Time Per Patient, *J. A. M. A.* **126**: 1113 (Sept. 21) 1945.

1. Syntheses in the Intestine, *Current Comment, J. A. M. A.* **126**: 174 (Sept. 16) 1944.

2. *Chem. & Engin. News*, **23**: 1656 (Sept. 25) 1945.

MEDICINE AND THE WAR

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

RECONVERSION OF THE 9-9-9 PROGRAM

The 9-9-9 program was devised in order to supply American hospitals with residents. Without it every commissioned officer, which represented 80 per cent of each class, would have been called to active duty at the end of twelve months of internship and the American hospitals would have been practically devoid of residents. The Procurement and Assignment Service made arrangements with the Surgeons General so that a sufficient number of officers could have their active duty orders delayed and the hospitals could have a minimum supply of residents with which to operate during the war. The whole plan constituted a loan of military personnel to civilian institutions by the Surgeons General, and they were willing to enter into the plan because it was perfectly obvious that there was no other supply available with which to keep these hospitals operating.

Increasing numbers of veterans who have seen active duty are becoming available for filling such positions, and therefore the Surgeons General are convinced that it is in order to call to active duty as rapidly as possible every commissioned officer who has not been on active duty. Hospitals, therefore, must begin at once to appoint veterans to every staff position so that, with rare exception, every military resident can be called to active duty not later than April 1, 1946. As soon as a veteran has been adequately trained to replace a commissioned officer resident, that officer should be called to active duty at once without regard to whether or not he has completed the full term of his present deferment. The hospital must notify the state chairman for physicians of the Procurement and Assignment Service of the availability of such officers at once. State chairmen must watch these developments closely. At present veterans will not count in hospital quotas and it will be of great advantage to the hospitals to accept veterans as replacements for the officers who do count in quotas. The great advantage to hospitals in accepting veterans promptly is that they will be orientated to their position before April 1 in anticipation of the fact that after July 1 such veterans will be practically the sole source of supply of residents for civilian hospitals.

Hospitals and commissioned officers now serving as residents are reminded that any contract with hospitals is wholly subsidiary to their legal obligation to the Army and Navy and that each individual is subject to active duty orders at the discretion of the Surgeons General.

Present deferments were granted by the Surgeons General prior to VE day when there was no other supply available to the hospitals. In many institutions veterans are applying by the scores for hospital appointments, and hospitals should accept them to the greatest extent possible in anticipation of the fact that those not having been on active duty will be called.

In those cases in which the hospital desires the services of an officer on active duty in the Army to fill a residency and the hospital is willing to release a deferred commissioned resident who has not been on active duty before the termination of his present deferment period in exchange and he is an officer (1) who has been on active duty for two years or more, (2) who is now stationed within the continental United States and (3) who would accept the appointment, a request for the release of that officer under War Department Circular 296 through the Procurement and Assignment Service will receive immediately prompt and favorable consideration by the Surgeon General of the Army. This replacement possibility does not extend to officers on duty with the Navy.

The Procurement and Assignment Service will continue to recognize its responsibility toward the hospitals, and in those individual instances, very limited in number, in which hospitals are unable to secure a veteran after exhausting every effort or an officer who qualified under the War Department Circular 296 will be given consideration by the Procurement and Assignment

Service and the Offices of the Surgeons General. Subject to the foregoing general provisions the reconversion from the 9-9-9 program to a peacetime twelve month service will be conducted in accordance with the following plan: (This outline applies to the April group. Information concerning those who finish their present term before April and after April will be released in the near future.)

SECTION I

A. Each commissioned officer who is an intern terminating his nine months of internship on April 1, 1946 will continue in his present internship until July 1, 1946. (For exceptions see section II.)

B. Each commissioned officer who is a junior resident terminating his junior residency on April 1 (if he has not already been replaced by a veteran prior to April 1) will be called to active duty on April 1 except in rare cases in which special request for his service is submitted to and approved by the Procurement and Assignment Service and the Surgeon General, such request to be effective only until he is replaced by a veteran and not beyond July 1, 1946.

C. Each commissioned officer who is senior resident and who is completing his twenty-seven months of service in a hospital following graduation will be called to active duty on or about April 1, 1946 if not replaced prior to that date by a veteran.

D. Senior students who graduate on or about April 1, 1946 are to be accepted for internship on that date. This new group of interns will be allowed to serve internships until July 1, 1947. This means that hospitals would have a maximum of twice their quota of interns from April to July and their quota of interns from July to the following July. In view of this and in order to maintain equitable distribution of the intern supply, quotas for interns will be maintained at their present levels.

SECTION II

A. The present interns (referred to in paragraph A, section I) will be called to active duty on July 1, 1946 except (1) those who are called to duty between April 1 and July 1 because the hospitals cannot facilitate both the old and new groups of interns for three full months of overlapping service; and (2) those rare cases in which their services are absolutely essential for an additional period in civilian hospitals. Their services will be deemed necessary only in those cases in which the Procurement and Assignment Service and the Surgeons General are convinced that every effort to obtain the services of veterans, physically disqualified or otherwise ineligible men or of women has been made. [N. B.: If Congress votes funds to continue the ASTP beyond June 30, 1946 the military group in the following class (unless the Army Training Service abandons its present acceleration demands) will become available for internship on Jan. 1, 1947. This would produce a six month overlap from January to July, but it is hoped that this can be avoided.]

B. The present junior residents (referred to in paragraph D, section I) will be called to active duty as soon as replaced by a veteran with the same exceptions stated in paragraph A, section I.

C. (Blank).

D. The new graduates (referred to in paragraph D, section I), who will complete twelve months of internship on or before July 1, 1947 will be called to active duty on that date. These men may have as much as fifteen months of internship, that is, April 1, 1946 to July 1, 1947.

SECTION III

By April 1, 1946 hospitals will be almost entirely dependent on nonmilitary personnel to fill residencies.

This program does not contemplate an interference with the present policy of not including veterans in quotas. In fact, it emphasizes the importance of acquiring the services of such veterans at the earliest possible moment so that they will be adequately trained to serve as replacements for officers now deferred to April 1 and for the period when they will represent practically the entire supply—after July 1, 1946.

In the interest of adequate distribution of the available supply of veterans, it is expected that hospitals will not fill their house staff out of proportion to present quotas. These veterans should be used first as replacements, and present quotas for residents should not be exceeded until all deferred commissioned officers who have not been on active duty have been released from that particular hospital. This is, not contrary to the policy of not counting veterans in quotas until they are sufficiently trained to be used as replacements.

It will not be necessary to submit forms 218 for the continuation of interns for the period from April 1 to July 1, referred to in paragraphs A and B, section I. It will be presumed, however, that the junior residents referred to in paragraph B, section I, practically without exception, will not be requested for this period and will be released prior to but not later than April 1 and as soon as they can be satisfactorily replaced by officers discharged or separated from the service.

The necessity of reconverting from the 9-9-9 program as rapidly as possible cannot be emphasized too strongly and to the greatest extent possible for the purpose of returning to the July to July twelve month internship this coming year. The most available and safest supply of physicians to serve residencies will be these who have completed their military obligation to the nation during the war and the duration of the emergency.

ARMY

GENERAL KIRK RECEIVES DISTINGUISHED SERVICE MEDAL

Major Gen. Norman T. Kirk, Surgeon General of the Army, was recently awarded the Distinguished Service Medal by Gen. Brehon Somervell, commanding general of the Army Service Forces, in recognition of his "outstanding leadership . . . in directing the largest Medical Department in the history of the United States Army." According to the official citation, "By careful planning, efficient administration and dynamic example he [General Kirk] made possible extraordinary care for sick and wounded American soldiers—care which has never been equaled in any war. He supervised the selection of qualified medical specialists who were assigned to posts stretching from the forward areas to general hospitals in the zone of the interior and combined their exceptional talents with a prompt evacuation system to achieve unprecedented results. Under his able guidance every effort was made to utilize the newer methods of medical and surgical treatment and to develop new technics. His plans for the care of battle casualties and outstanding efforts to prevent disease among the troops resulted in an enormous reduction in mortality and morbidity. Bearing tremendous responsibilities, General Kirk accomplished his trying task in a distinctly superior manner, thereby making a major contribution to the success of American arms." General Kirk graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1910 and entered the service in 1912.

PLASTIC EYE CENTERS

In keeping with the Army's program to establish sufficient plastic eye centers to supply the needs of patients requiring prostheses, Fitzsimons and O'Reilly general hospitals, Denver and Springfield, Mo., respectively, have been added to the list of general hospital centers. Other army general hospitals now producing plastic eyes are Thayer, Birmingham, McGuire, Hammond, Barnes, Dibble, Newton D. Baker, Tilton (also Waltham Regional Hospital), Rhoads, Halloran, McCloskey, Wakeman, Glennan, Cushing, Ashburn, Crile, Northington, Gardiner, Lawson, Walter Reed, Percy Jones, Brooke, William Beaumont, Finney, Harmon and Valley Forge.

AWARD OF MERITORIOUS SERVICE UNIT PLAQUE

A Meritorious Service Unit Plaque was recently awarded to the 318th Medical Battalion for superior performance and outstanding devotion to duty from Nov. 15, 1944 to Sept. 20, 1945. This unit was charged with the important and difficult task of providing medical care, treatment and evacuation facilities for the entire personnel of the 93d Infantry Division, although they were distributed on various bases over a vast area of the Pacific. As the result of devotion to duty, long hours and cheerful cooperation on the part of all personnel, excellent medical care and treatment was provided in spite of the battalion being under

strength in personnel, both commissioned and enlisted. Despite the difficult and trying situations the unit maintained high standards of administration and continued improvements in medical service, housekeeping, sanitation, military courtesy and discipline. The appearance of personnel was at all times exemplary. The unit average on ordnance inspections was among the highest in the 93d Infantry Division, notwithstanding the fact that class 2 and 3 vehicles comprised 90 per cent of the vehicles. The unit was at all times preeminent in its achievements and received commendations from various visiting officials, including the Surgeon General of the Army. Throughout the entire period of operation a high degree of morale and *esprit de corps* was maintained.

ARMY AWARDS AND COMMENDATIONS

Colonel Perrin A. Long

Col. Perrin A. Long, Baltimore, was recently awarded the Legion of Merit in recognition of his work as medical consultant to the surgeon, Mediterranean Theater of Operations, from Jan. 3, 1943 to Aug. 1, 1945. The official citation stated in part that, "as medical consultant to the surgeon, North African and later the Mediterranean Theater of Operations, Colonel Long efficiently organized the medical service of hospitals and other medical units and by his teaching and counsel developed such successful therapeutic methods of handling malaria, bacillary dysentery and other infectious diseases that mortality and permanent disability among American troops were reduced to an unprecedented low level." Dr. Long graduated from the University of Michigan Medical School, Ann Arbor, in 1924 and entered the service Aug. 27, 1942.

Colonel Arthur B. Welsh

The Legion of Merit was recently awarded to Col. Arthur B. Welsh, Washington, D. C. The citation stated that "he rendered conspicuous and meritorious service in the medical program at the Army from November 1941 to May 1945 in his capacity as deputy director, then as director of the Plans Division and later as deputy chief of the Operations Service, Surgeon General's Office. He envisioned, and established as his objective an all inclusive and comprehensive policy for the early treatment, hospitalization and evacuation of our sick and wounded soldiers. He formulated the Medical Department Mobilization Plan, which resulted in a well balanced medical service, as evidenced by the extremely low mortality rates during the all out prosecution of the war. He also formulated and effected the plan to increase the bed capacity of general hospitals employed overseas, resulting in an economy in the use of personnel and equipment at a time when the shortage of both was critical and the requirements greatest. His keen judgment and breadth of vision were apparent in the effectiveness of the operations of the Medical Service overseas." Dr. Welsh graduated from the University of Pittsburgh School of Medicine in 1925 and entered the service June 10, 1925.

Colonel Frank E. Stinchfield

The Legion of Merit was recently awarded to Col. Frank E. Stinchfield, formerly of New York, for "exceptionally meritorious conduct in the performance of outstanding service as commanding officer, — Station Hospital, during the period August 1943 to August 1944. Under adverse conditions Lieutenant Colonel Stinchfield developed this 4,000 bed capacity. In the short time he has operated this hospital it has rehabilitated and returned to duty approximately 85 per cent of its patients. Through his diligence, vision and ingenuity he developed a rehabilitation program so wide in scope that thousands of men

were sent back to duty completely rehabilitated. The resultant conservation of manpower has materially aided the progress of the war. Lieutenant Colonel Stinchfield established two schools to make his extensive program of rehabilitation familiar to as many as possible. Faced with lack of proper equipment and a shortage of qualified personnel, he improvised his equipment and trained his own personnel. Since the inception of the program Lieutenant Colonel Stinchfield's staff has trained hundreds of officers in the principles and methods of rehabilitation." Dr. Stinchfield graduated from Northwestern University Medical School, Chicago, in 1935 and entered the service Feb. 15, 1942.

MISCELLANEOUS**WARTIME GRADUATE MEDICAL MEETINGS**

The following subjects and speakers for Wartime Graduate Medical Meetings have just been announced:

California

Torney General Hospital, Palm Springs: The Rh Factor, Capt. George Maccr, December 4; Hemolytic Streptococcus Respiratory Infections and Their Sequelae, Dr. Robert E. Solley, December 18.

A. A. F. Regional and Convalescent Hospital, Santa Ana Army Air Base: Contagious Diseases, Comdr. R. A. Trombley, December 4; Compound Fractures, Comdr. P. E. McMasters, December 18.

Camp Cooke Station Hospital, Lompoc: The Cancer Problem in Service Personnel, Lieut. J. S. Binkley, December 5; Problems in Tuberculosis, Comdr. W. L. Rogers and Comdr. A. W. Hobby, December 19.

Hoff General Hospital, Santa Barbara: The Cancer Problem in Service Personnel, Lieut. J. S. Binkley, December 5; Problems in Tuberculosis, Comdr. W. L. Rogers and Comdr. A. W. Hobby, December 19.

U. S. Naval Hospital, San Diego: The Classification and Diagnosis of the Anemias, Dr. A. G. Foord, December 6.

U. S. Naval Air Training Station, San Diego: Burns, Capt. H. T. D. Kirkbaum, December 7; The Penicillin Treatment of Syphilis and Gonorrhea, Comdr. W. W. Duemling, December 21.

U. S. Regional Hospital, Pasadena: The Rh Factor, Capt. George Maccr, December 10.

Station Hospital, Fort Ord: Diseases of the Lungs and Their Treatment, Dr. Philip H. Pierson, December 15.

U. S. Naval Hospital, Treasure Island: Diagnosis of Atypical Anemias, Dr. Stacy R. Mettier, December 7.

Station Hospital, Camp Roberts: Diseases of the Thyroid: Clinical Considerations, Dr. Mayo H. Soley, December 8.

Station Hospital, Chico Army Air Base, Chico: Laboratory Aids in the Diagnosis of Disease, Dr. Jesse L. Carr, December 6.

Station Hospital, Stockton Air Field, Stockton: The Fundamentals of Endocrine Diagnosis, Dr. Roberto F. Escamilla, December 12.

U. S. Naval Hospital, Santa Margarita Ranch: Communicable Diseases, Major Norman Nixon, December 13; Problems Associated with the Surgery of the Biliary Tract, Capt. Howard K. Gray, December 27.

Dibble General Hospital, Menlo Park: The Surgical Anatomy of Hernia, Dr. Harold H. Lindner, December 3.

Illinois

Gardiner General Hospital, Chicago: Surgical Management of Tuberculosis, Dr. Jerome Head, November 28.

Pennsylvania

U. S. Naval Hospital, Philadelphia: Emotional Factors in Physical Illness, Dr. Earl D. Bond, December 7; Difficulties in the Diagnosis of Surgical Lesions of the Upper Urinary Tract, Dr. Leon Herman, December 28.

Virginia

Regional Hospital, Camp Lee, Petersburg: The Treatment of Vascular Hypertension by Extensive Sympathectomy, Dr. C. C. Coleman, December 14.

UNRRA NEWS**Plastic Surgery Team to Yugoslavia**

According to a recent release from the United Nations Relief and Rehabilitation Administration, Washington, D. C., a plastic surgery team with special training and experience gained in England during the war will be dispatched to Belgrade, Yugoslavia, to train doctors and nurses there in the latest techniques. Dr. Neville M. Goodman, director at London of UNRRA's European division of health, stated that "casualties among both soldiers and civilians in Yugoslavia created a large number of cases needing plastic surgery. The team of experts being sent by UNRRA will train enough Yugoslav surgeons so that they can carry on the necessary work without further assistance."

The team, which includes three surgeons, three specially trained nurses, a dental operator and a medical secretary, will be set up in a Belgrade hospital which escaped war damage and which is to be provided by the Yugoslav government. All the members of the team are drawn from the staff of a widely known British plastic surgery hospital near Basingstock. The team as a whole will remain in Yugoslavia for six months, but members will be relieved at intervals by different surgeons who will demonstrate and give training in the techniques of other schools of plastic surgery.

**CAPTAIN LOWELL T. COGGESHALL
AWARDED GORGAS MEDAL**

The Gorgas Medal, which has been awarded annually since 1942 by Wyeth Inc., Philadelphia, was given this year to Capt. Lowell T. Coggeshall (MC), U.S.N.R., expert on tropical diseases, "for distinguished service to our military forces in establishing new principles in the management of patients suffering from psychic disturbances as well as physical deterioration from the effects of malaria and filariasis. Captain Coggeshall instituted the system of psychosomatic rehabilitation by which thousands who faced discharge attributed to malaria and filariasis were returned to full duty. His was not only a brilliant accomplishment in a special field of military medicine, but he also inaugurated a new epoch in the treatment of a wide variety of diseases."

The medal was presented to Captain Coggeshall by Frank F. Law, vice president of Wyeth Inc., at a dinner in his honor at the Mayflower Hotel, Washington, D. C., October 29 and carries with it an honorarium of \$500. The award was established in memory of Surg. Gen. William Crawford Gorgas, U. S. Army.

**DALLAS COUNTY MEDICAL SOCIETY
LISTS RETURNED MEMBERS**

A campaign is being sponsored by the Dallas County Medical Society and the Dallas Southern Clinical Society whereby its members who have returned from service will be listed in each of the two Sunday papers published in that city. A different group of names is used each month and the campaign is to be continued for a minimum of six months.

In addition, a placard with the following legend is displayed in the reception room of every Dallas physician:

"May We Suggest, WHEN YOUR DOCTOR RETURNS FROM THE SERVICE RETURN TO YOUR DOCTOR"

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Ferguson, Hal, 1st Lt, T C I Hosp, Fairfield
Goldsmith, Edward F Jr, Capt, 22 Clinton Ave, Toulminville
Gully, Virgil S, Capt, Butler
Parker, Charles E, Major, 625 Woodley Rd, Montgomery
Watkins, James H, Lt Col, 1512 S Hull St, Montgomery
Williams, Howard B, Capt, 1514 Milner Crescent, Birmingham

Arizona

Brainard, Hollis H, Capt, 2521 E 8th St, Tucson
Holbrook, William P, Col, Box 1390, Tucson
Jolley, Elvie T, Capt, P O Box 776, Jerome
Knight, Frederick W, Capt, Safford
Littlefield, Jesse B Sr, Lt Col, 10 Calle Corta, Tucson
Yount, Clarence E, Major, Prescott

Arkansas

Crow, Merl T, Major, E Cedar St, Warren
Dozier, Floyd S, Major, Marvell
Hogaboom, G M, Capt, 914 Malvern, Hot Springs Nat'l Pl
Huskins, James D, Capt, Siloam Springs
Hyatt, Robert F, Capt, Monticello
Kahn, Alfred Jr, Capt, 3504 Hill Rd, Little Rock
Maynard, Ross E, Capt, 1216 W 13th Ave, Pine Bluff
Mossman, Frank D, Capt, 1922 Arch St, Little Rock
Mundt, Leslie K, Lt Col, 727 Franklin St, Helena
Pierce, James O, Capt, 286 Home St, Marked Tree
Rowland, Ely D, Major, 233 Hobson Ave, Hot Springs
Sheppard, Jack M, Capt, 403 Church St, Eldorado
Thompson, John K, Capt, 2601 S Greenwood, Fort Smith
Utey, Francis E, Major, Walls Hosp, Blytheville
Whitehead, Robert H Jr, Capt, 103 S Harrison, Camden

California

Andrews, A V, Major, P O Box 365, Livingston
Auerbach, Oscar, Major, 7215 Willoughby Ave, Los Angeles
Avelrod, Bernard, Capt, 323½ S Detroit St, Los Angeles
Baker, John S, Major, 803 N Detroit St, Los Angeles
Barrett, Thomas F, Capt, 892 Ashbury St, San Francisco
Bergman, George C, Lt Col, 3514 W 85th St, Inglewood
Berkove, Alfred B, Lt Col, 1 Hillwood Pl, Oakland
Bernstein, Harry C, Major, 700 Parnassus Ave, San Francisco
Bigotti, Richard T, Capt, 833 Pershing Ave, San Jose
Coggin, Charles B, Major, 1537 Michigan Ave, Los Angeles
Cruden, Alexander W, Capt, Sycov Ventura Co
Dittes, Albert G, Capt, 1712 E Chevy Chase Dr, Glendale
Dufney, Rafael G Jr, Capt, 324 Arguello Blvd, San Francisco
Fessler, Willard G, Capt, Los Altos
Fogarty, Clement A, Col, Box 224, Rose
Forcade, William P, Major, 254 Roman St, San Francisco
Gompertz, John L, Major, 305 Hillside Ave, Piedmont
Gottlieb, Jacob D, Major, Box X, Talmage
Gummies, Glen H, Capt, 5721 Olympic Blvd, Los Angeles
Hartwell, Bruce F, 1st Lt, 196 6th St, Beaumont
Havenhill, Asher D, Capt, End of Emeline St, Santa Cruz
Hedge, Arden R, Major, 3040 Lyon St, San Francisco
Hoff, Cecil W, Capt, 2797 Stoddard St, Bernardino
Huff, William C, 1st Lt, Ventura Co Hosp, Ventura
Irvine, Wendell C, Major, 700 Roosevelt Bldg, Los Angeles
Jackson, Edward A, Major, 236 Broadway, Atwater
Kelley, Thomas J, Capt, 5335 Crenshaw Blvd, Los Angeles
Kimball, Herbert S, 1st Lt, 19 Eastwood Ct, Orinda
Knott, James I, Major, 3401 Pershing Dr, San Diego
Laubersheimer, Anton, Capt, 829 S Alvarado St, Los Angeles
Linne, Francis B, Major, 1201 E 8th St, Los Angeles
Liston, Edward, Major, 1300 Hamilton Ave, Palo Alto
McCarry, Frank, Capt, 4614 Sunset Blvd, Los Angeles
Micheli, Leon M, Major, 165 Stanvan St, San Francisco
Michener, John M, Major, 1398 Sheridan Ave, Pomona
Moore, Carl L, Capt, 2300 Truxtun, Bakersfield
Nicol, Quintus, Lt Col, 112 S Taylor Ave, Montebello
Norquist, Donald M, Major, 640 W 27th St, Los Angeles
Pelton, Eugene C, Capt, 1400 Fell St, San Francisco
Pettit, Charles H, Capt, 2200 W 3d St, Los Angeles
Prejavan, Oran V, Major, 921 Louse St, Santa Ana
Rombeau, Lee P, 1st Lt, 711 N Dillon St, Los Angeles
Sohler, F E Jr, Lt Col, Corner West & 3d Sts, Glendale
Taw, Richard L, Capt, 1137½ S Doheny, Los Angeles
Tuch, Benjamin E, Capt, 316 N Rossmore, Los Angeles
White, Marcus D, Col, Ontario
Whitlock, Thomas S, Capt, 4778 Panorama Dr, San Diego

Colorado

Ambler, John V, Lt Col, 1925 Holly St, Denver
Baker, Albert B, Lt Col, 423 Cullumbine St, Sterling
Beuchat, Eugene S, Lt Col, 602 E 2d St, Trinidad
Desmond, William M, Capt, Ordway
Lev, Eugene B, Major, Pueblo
Mihalick, John, Major, 611 E Columbia, Colorado Springs
Moffatt, Thomas W, Major, St Joseph's Hos, Denver
Morrill, Edgar M, Major, 1200 S College Ave, Fort Collins
Newland, Donald E, Capt, 510 Eudora St, Denver
Swanson, Howard E, Major, 1589 Madison St, Denver
Swiger, William B, Capt, 40 Eudora St, Denver
Tramp, Paul E, Capt, Sheedy Bldg, Yuma
Wills, Charles B, Capt, St Lukes Hosp, Denver

Connecticut

Albamonti, Mario J, Capt, 59 St Regis Ave, Norwich
Brown, Harwin J, Capt, 520 E 8th St, Wmfield
Carpentieri, Anthony L, Capt, 727 Howard Ave, New Haven
Castaldo, Louis F, Capt, 47 Goodsell St, Bridgeport
Cipriano, Anthony P, Capt, 167 Livingston St, New Haven
Cole, Milton J, Major, 110 Thomaston St, Hartford
Dean, William W, Capt, New Haven Hosp, New Haven
Dion, Asa J, Capt, 207 Washington St, Hartford
Greenspun, David S, Capt, 153 Southwood R, Bridgeport
Hansen, Paul S, Capt, Kings Corner, Essex
Konopka, Frank J Jr, Capt, 6 S Wattlesex Ave, Wallingford
Lemaitre, Paul G, Capt, 171 Providence St, Putnam
Markle, Raymond D, Capt, Pleasant St, North Woodbury
Patterson, Frederick A, Capt, 520 West Ave, Norwalk
Tate, William J Jr, Capt, 111 Kirtland St, Deep River
Wesoly, Andrew S, Capt, 365 High St, New Britain

Delaware

Baker, John H, Capt, 206 N Walnut St, Milford
Burton, Benjamin F Jr, Capt, 214 S State St, Dover
Stradley, Shermer H Jr, Capt, 2005 Monroe Pl, Wilmington
Szatkowski, Eugene J, 1st Lt, 732 S Broom St, Wilmington

District of Columbia

Cliff, Arthur E, Major, 3901 S Dakota Ave NE, Washington
Dowd, James F, 1st Lt, 7815 12th St NW, Washington
Farley, Otis R, Major, St Elizabeth's Hosp, Washington
Folston, Mortimer J, Capt, 506 22d NW, Washington
Gray, Luther W, Lt Col, 128 18th St SE, Washington
Hand, John P Jr, Major, 3333 Baker St NE, Washington
Kanof, N B, Capt, 1312 Rittenhouse St NW, Washington
Kay, Alvin I, Major, 3609 Van Ness St NW, Washington
Klemerman, Morris, Major, St Elizabeths Hosp, Washington
McKaig, Malcolm C, Major, 1473 Park Rd, Washington
Maher, R C Jr, Capt, 315 W Young St, Washington
Moore, John S, Capt, 1868 Columbia Rd NW, Washington
Settle, William B, Capt, 2630 Nichols Ave SE, Washington
Turner, P R, Capt, 213 Baltimore, Takoma Pl, Washington

Florida

Angel, Norman S, Capt, 1814 S W 22 Terr, Miami
Babers, Henry J Jr, Major, 312 E Union St, Gainesville
Bippus, William E, Capt, 601 Guaranty Bldg, W Palm Beach
Bourkard, Ernest R, Capt, Jackson Memorial Hosp, Miami
Chapman, Jules B, Major, 2151 Pearl St, Jacksonville
Diehl, Earl H, Lt Col, 608 Wilkie St, Dunedin
Gifford, John P, Major, Vero Beach
Hurt, Floyd K, Major, 3634 Boone Park Ave, Jacksonville
Kelley, Oscar L, Major, 324 Valley Forge Rd, W Palm Beach
Kibler, John M, Major, 640 Woodward Dr, Lakeland
Langley, Francis H, Lt Col, 190 18th Ave, St Petersburg
Lefholz, Rothwell, Major, 1009 Huntington Bldg, Miami
Massey, James L, Capt, 204 N Madison St, Quincy
Merritt, James W Jr, Lt Col, Jackson Mem Hosp, Miami
Norris, H S, Capt, 50 Fuller Wood Dr, St Augustine
Orr, Louis M, Col, Delaney & Gatlin Ave, Orlando
Pomerance, Joseph B, Major, 235 9th St, Miami Beach
Russell, Ralph E, Capt, 1201 Lake Weir Ave, Ocala
Saslaw, Milton S, Major, 1238 S W 8th St, Miami
Seltzer, Morris B, Capt, 417 N Oleander Ave, Daytona Beach
Silverman, Harry Z, Capt, 760 Collins Ave, Miami Beach
Sisler, Bruce H, Lt Col, Miami Beach
Sullivan, Benjamin H, Capt, 1010 W Henry St, Tampa
Tugwell, Wilton E, Major, 1594 W International St, Pensacola
Vinson, Clifford E, Capt, Jackson Memorial Hosp, Miami

PHYSICIANS SEPARATED FROM SERVICE

Georgia

Adams, Everett H., Capt., Gen. Del., Rutledge.
Archer, George F., Capt., 21 Peachtree Memorial Dr., Atlanta.
Bailey, Milus K., Major, 1106 Med. Arts Bldg., Atlanta.
Bedingfield, Walter H., Capt., Rentz.
Brown, Samuel Y., 1st Lt., 1697 Noble Dr. N.E., Atlanta.
Chambers, James W., Major, 601 Winzor Ave., LaGrange.
Colvin, Emmett D., Major, 1259 Clifton Rd. N. E., Atlanta.
Cook, James T. Jr., Capt., Emory University Hosp., Emory.
Cook, Wendell H., Capt., Fort Oglethorpe.
Crawford, William B. Jr., Major, Gordonston, Savannah.
Danial, Abram B., Capt., Statesboro.
Fuller, William A. Jr., Major, 976 Piedmont Ave. N.E., Atlanta.
Garten, Leonard, Capt., University Hosp., Augusta.
Gower, Orien T. Jr., Lt. Col., 501 13th Ave. E., Cordele.
Griffin, Louie H., Capt., Warren A. Candler Hosp., Savannah.
Harrold, Charles C. Jr., Capt., 550 Orange St., Macon.
Henry, Charles G., Major, 2627 Helen St., Augusta.
Hicks, David Y. Jr., Major, Univ. Hosp., Augusta.
Hilsman, Palaemon L., Capt., 206 N. Jefferson St., Albany.
Jennings, James L., 1st Lt., 683 Elkmont Dr. N.E., Atlanta.
Johnson, Joseph E. Jr., Capt., 385 E. Church St., Elberton.
Jordan, Charles G., Major, Sasser.
Kandel, Harry M., Lt. Col., 432 Abercorn St., Savannah.
Leroy, Albert G., Capt., Tifton.
Levin, Harold B., Major, 116 Brown Pl. S.W., Atlanta.
McGehee, John M., Capt., 223 Jule Peek Ave., Cedartown.
Monfort, John M., Lt. Col., 3870 Club Dr. N.W., Atlanta.
Muecke, Harold W., Capt., 120 Hill Crest Ave., Macon.
Mulkey, Arnold P., Capt., 115 Winthrop Ave., Millen.
Neighbors, Joseph B. Jr., Major, 302 Hines Terrace, Macon.
Peck, Robert E., 1st Lt., 1246 Avon Ave. S.W., Atlanta.
Sanchez, Simeon E. Jr., 1st Lt., Barwick.
Storey, William E., Capt., Macon Rd., Columbus.
Warren, Joseph E., Capt., Hartwell.
Ward, Francis O., Major, Macon Hosp., Macon.
Worthy, William S., Capt., 26 Tanner St., Carrollton.
Yuckman, William, Major, Quitman.

Idaho

Bischoff, George H., Major, 6th & Hancock, Boise.
Douglas, Wallace S., Col., 1511 Prospect Ave., Lewiston.
Goodwin, Ralph A., Major, 115 N. Washington Ave., Emmett.
Jacobs, William R., Capt., 1204 12th, Lewiston.
Mellor, Wendell J., Capt., 492 L St., Idaho Falls.
Randall, Reginald C., Capt., Kellog.

Illinois

Alford, Frank L., Capt., 4 W. Crystal Lake Ave., Crystal Lake.
Augenlight, Jacob C., Capt., 1423 Farragut Ave., Chicago.
Axel, Carl, Capt., Lee.
Bailis, Jack M., Capt., Pittsfield.
Bard, Eli, Capt., 1938 Wilmont Ave., Chicago.
Behrents, Ellis G., Capt., Presbyterian Hosp., Chicago.
Bellows, John G., Major, 720 N. Michigan Ave., Chicago.
Block, Arnold S., 1st Lt., 1100 N. Dearborn St., Chicago.
Bloom, Charles R., Major, 1331 S. Austin Blvd., Cicero.
Boeke, Emmert G., Capt., Winslow.
Boon, Clifton I. U., Capt., 416 Ingleside Ave., Aurora.
Boshes, Benjamin, Lt. Col., 4918 Drexel Blvd., Chicago.
Brunner, Matthew J., Capt., 3518 W. Monroe St., Chicago.
Brownstein, Stanley, Capt., 5553 W. Congress St., Chicago.
Buehrig, Robert C., Major, Minier.
Busch, Robert C., Capt., 1340 Independence Rd., Chicago.
Cherner, Abraham M., Capt., 7641 S. Phillips Ave., Chicago.
Chobot, George R., Capt., 2515 S. Avers Ave., Chicago.
Czeisler, Tibor, 1st Lt., 770 S. Bennett Ave., Chicago.
Daro, August F., Major, 30 N. Michigan, Chicago.
Davenport, Harold A., Lt. Col., 303 E. Chicago Ave., Chicago.
Davis, Earl S., Capt., 421 E. Lincoln, Belvidere.
Deering, David, Capt., 999 Victoria St., Antioch.
Dickey, Marvin M., Lt. Col., Richmond.
Eisele, Owen J., Capt., 1761 N. 40th St., East St. Louis.
Ennis, Arthur L., Capt., 1349 W. Wood St., Decatur.
Faigle, Ernest T., Capt., 4310 N. Keystone Ave., Chicago.
Faller, Adolph, Lt. Col., 5206 S. Kimbark Ave., Chicago.
Fara, Frank J., Lt. Col., 5539 W. Cermak Rd., Cicero.
Flexman, Edmund A., Capt., 2534 Gunnison St., Chicago.
Friedman, David, Capt., 1532 3d St., Madison.
Gaynes, Harvey E., Lt. Col., 720 Waveland Ave., Chicago.
Giles, Roscoe C., Lt. Col., 541 E. 46th Pl., Chicago.
Goldstein, Hyman H., Major, 6500 Irving Blvd., Chicago.
Goldfine, Manuel, Capt., 841 E. 63d St., Chicago.
Gordon, Marion L., Capt., 1111 N. Monticello Ave., Chicago.

Illinois—Continued

Greene, B. L., Major, Elgin State Hosp., 750 S. State St., Elgin.
Harmon, Thomas F., Capt., 1601 S. Douglas St., Springfield.
Hipsking, Myron M., Major, 6060 Drexel Ave., Chicago.
Hoeffding, Waldemar, Capt., 102 E. Monroe St., Paris.
Iknayan, Herbert A., 1st Lt., 1414 7th St., Charleston.
Janson, Carl H., Capt., 17938 Homewood Ave., Homewood.
Jesser, Joseph H., Capt., 3358 N. Broadway, Chicago.
Johnson, Howard G., Capt., 210 S. 6th St., Casey.
Kaplan, Leo A., Capt., 808 Junior Terrace, Chicago.
Kaplan, Louis G., Capt., 3422 W. Monroe St., Chicago.
Karras, Samuel J., Capt., 105 N. 18th Ave., Melrose Park.
Kearns, Owen A., Capt., 321 W. State St., Rockford.
Koransky, Abraham R., Capt., 3816 Wrightwood Ave., Chicago.
Lattuada, Henry P., Major, 909 S. State St., Westville.
Lemberg, David A., Capt., 2900 W. Fitch Ave., Chicago.
Leventhal, Harry, Captain, 5425 Woodlawn, Chicago.
Lewin, Philip, Lt. Col., 1642 E. 59th St., Chicago.
Lustigman, Herman, Capt., 465 Grove St., Glencoe.
McBean, James B., Major, 7132 Ridgeland Ave., Chicago.
McCormick, Loyd J., Major, 2103 13th St., Moline.
McDougall, Francis J., Capt., 514 Williams St., River Forest.
McGinnis, William F., Capt., 318 W. Oak St., Carbondale.
McMorrow, Thomas R., Capt., 523 Prospect Rd., Peoria.
Maley, William F., Major, 44 N. Cherry St., Galesburg.
Magnelia, August L., Major, 1226 Garrison Ave., Rockford.
Maller, Adolph M., Capt., 4406 Clarendon Ave., Chicago.
Markiewicz, Simon V., Major, 4900 Pensacola Ave., Chicago.
Moore, Rollin S., Major, 305 Court St., Streator.
Nedoss, Hyman P., Capt., 1450 S. Kolin Ave., Chicago.
Olentine, Julie E., Capt., 3812 W. Monroe St., Chicago.
Pace, Anthony J., Capt., 734 N. Sawyer Ave., Chicago.
Parisi, Patrick, Capt., 1516 Edgewood Ave., Chicago Heights.
Pinne, George F., Capt., Billings Memorial Hosp., Chicago.
Plestina, Joseph M., Capt., 258 W. 33d St., Chicago.
Porte, David M., Capt., 3839 Ainslie St., Chicago.
Prunty, Francis C., Major, 1308 S. Race St., Urbana.
Puestow, Charles B., Col., 861 Lincoln, Highland Park.
Remich, Antone C., Capt., 12 W. 163d St., Calumet City.
Richter, John C. Jr., Capt., Presbyterian Hosp., Chicago.
Roe, Charles T., Capt., 544 S. Grove Ave., Oak Park.
Sandburg, Carl L., Capt., 405 Poplar St., Clinton.
Sargent, William F., Capt., 303 N. Broadway, Salem.
Saxon, Michael R., Capt., Oswego.
Shaw, Jesse W., Major, 107 Maple, Carbondale.
Steck, Irving E., Major, 5900 N. Christiana Ave., Chicago.
Sutton, Edmund B., 1st Lt., Halsted Rd., R. R. 6, Rockford.
Svetich, Edward M., Capt., 1128 N. Hickory St., Joliet.
Thompson, Harry G., Capt., 324 N. 12th, Mt. Vernon.
Turnbull, George C., Lt. Col., 636 Church St., Evanston.
Vinnecour, Max I., Major, 7227 Luella Ave., Chicago.
Wachtel, Hans, Capt., 5100 S. Cornell, Chicago.
Wallin, Bruce J., Capt., Rockford.
Walpole, Stewart H., Major, 305 East Ave., Park Ridge.
Wattleworth, Kent L., Capt., 324 W. Reynolds St., Newton.
Weinfeld, Gustave F., Capt., 351 Woodland Rd., Highland Park.
Wien, Norman A., Capt., 3833 Washington Blvd., Chicago.
Williamson, Holland, Col., 106 N. Vermillion St., Danville.
Wilson, Clyde S., Lt. Col., Commercial Bldg., Belleville.
Yarbrough, Charles L., Capt., 2613 Washington, Cairo.
Young, Richard H., Lt. Col., 2719 Broadway, Evanston.
Ziffren, Sidney E., Capt., 1323 4th Ave., Rock Island.
Zweig, Mitchell, Capt., 310 S. Hamlin Ave., Chicago.

Indiana

Anderson, Harry B., Capt., 2133 Bellefontaine St., Indianapolis.
Anderson, James W., Capt., 1165 N. Pershing Ave., Indianapolis.
Anderson, Walter C., Major, 380 S. 22d St., Terre Haute.
Applegate, Frederick M., Major, Corydon.
Ball, Joseph E., Capt., 1126 N. Tacoma Ave., Indianapolis.
Barnett, Ralph E., Major, 68½ E. 5th St., Peru.
Beaver, Howard W., Capt., 2203 S. Meridian, Indianapolis.
Berke, Robert D., Capt., Healthwin Hos., South Bend.
Boother, Norman R., Lt. Col., 104 E. Maple Rd., Indianapolis.
Brown, James C., Major, 458 Park Ave., Valparaiso.
Bruegge, Theodore J., Capt., 101 E. Markland, Kokomo.
Carney, John C., Capt., 613 W. Washington St., Monticello.
Chavinson, Benjamin, Capt., 222 S. 3d St., Decatur.
Clark, Cyrus J., Col., R. R. 14, Indianapolis.
Cogswell, Howard D., Major, 1620 Parkview, Whiting.
Comstock, Glenn E., Major, 504 Broadway, Gary.
Daggy, Benjamin T., Major, P. O. Box 255, Richmond.
Dingle, Paul E., Capt., 801 Peacock Rd., Richmond.
Donahue, George R., Major, 1619 S. 9th St., Lafayette.

PHYSICIANS SEPARATED FROM SERVICE

Indiana—Continued

Grosso, William G, Capt, 3502 Grand Blvd, East Chicago
Hadley, David, Major, Indianapolis City Hosp, Indianapolis
Hammond, Keith, Major, Paoli
Hardesty, Kyle C, Capt, 2536 Thompson Ave, Fort Wayne
Harvey, Bennett B, Capt, Riley Hosp, Indianapolis
Headley, Lloyd M, Capt, 205 S East St, Lebanon
Hemming, Philip C, Capt, 668 Addison St, Elgin
Hurley, John R, Capt, Daleville
Hynes, Roy T, Capt, 6176 N Delaware, Indianapolis
Jackman, Abraham I, Capt, 5618 Calumet Ave, Hammond
Karpel, Bernard, Capt, % W A Kick, 1107 P St, Bedford
Kendrick, Frank J, Major, 552 Johnson St, Gary
Kidder, Orva T, Capt, Irene Byron Sanatorium, Fort Wayne
Kriebble, William W, Capt, 2320 Putnam Ave, Terre Haute
Lett, E Briscoe, Capt, Loogootee
Love, George N, Capt, 819 Oak St, Connersville
Lynch, Otis R, Capt, Mateno
McDonald, Ralph M, Capt, R R 2, Mishawaka
Michaels, Stephen C, Capt, 4311 Marquette Dr, Fort Wayne
Owen, Abraham M, Capt, 301 S Brady St, Attica
Palm, John M, Major, 27 E Church St, Brazil
Peacock, Norman F, Major, 7½ Mills Pl, Crawfordsville
Picha, Valerian J, Capt, 89 9th St, Logansport
Rabb, Harry S, Major, 1311 Union St, Indianapolis
Reed, William C, Lt Col, 1215 Atwater Ave, Bloomington
Rommel, C H, Major, 460 Northwestern Ave W, Lafayette
Sink, Frank G, Major, Remington
Slick, Crystal R, Major, Lynn
Smith, David L, Major, 723 Hume Mansur Bldg, Indianapolis
Smith, Lawson F, Capt, 3802 N Emerson Ave, Indianapolis
Stone, David F, 1st Lt, Sunnyside San, Indianapolis
Thompson, Charles F, Lt Col, 6038 N Olney, Indianapolis
Vance, William C, Major, 200 S 21st St, Richmond
Walker, James S, Capt, 1402 N Alabama, 215, Indianapolis
Weldy, Bryce P, Capt, 121 E Main St, Hartford City
Wilson, Fred L, Capt, 1501 S 3d St, Terre Haute

Iowa

Andre, Gaylord R, Lt Col, Lisbon
Ashline, George H, Capt, 1010 N 14th St, Keokuk
Barnes, Charles A, Major, 205 E Summit Ave, Shenandoah
Barton, John C, Lt Col, State Hosp, Independence
Bastron, Harold C, Major, Red Oak
Dushkin M A, Lt Col, 602 Bankers Trust Bldg, Des Moines
Flynn, Joseph E, Major, St Univ of Iowa Hosp, Iowa City
Gantz, Albert J, Capt, Greenfield
Geick, Raymond G, Capt, 709 Fowler St, Waterloo
Howar, Bruce F, Major, Jewell
Ihle, Charles W Jr, Lt Col, Cleghorn
Jansonius, John W, Capt, Eldora
King, Dean H, Capt, 915 E 4th St, Spencer
Longwell, Freeman H, Major, University Hosp, Iowa City
Ludwick, Arthur L, Major, Waterloo
Maure, Eugen J, Capt, Vail
Millard Robert E, Lt Col, 526½ Lake Ave, Storm Lake
Marrs, Walford D, Capt, Box 146, Tabor
Morrison, Roland B, Capt, 117 E 6th St, Carroll
Mosher, Martin L Jr, Capt, West Branch
Needles, Roscoe M, Capt, Atlantic
Newton Isaac J, Capt, University Hosp, Iowa City
Nicoll, Charles A, Major, Panora
Pascoe, Paul L, Capt, 1127 N Adams Carroll
Paulus, Edward W, Lt Col, 1039 E College St, Iowa City
Quinn, Francis P, Major, 887 Mt Carmel Rd, Dubuque
Shapiro, Seymour I, Capt, Miss Hotel, Davenport
Steffey, Frederick L, Major, 703 Blondeau St, Keokuk
Wiltitt, Wilton J, Capt, Manchester
Wilson Frederick D, Capt, Morning Sun

Kansas

Aldis, John, 1st Lt, 1014 Merchant St, Emporia
Birtlett Wayne C, Major, 106 N Main St, Wichita
Filkin, Lawrence E, Lt Col, 721 W 6th St, Junction City
Gonser, Karl B, Capt, 1300 S 4th St, Leavenworth
Lewis, George K, Lt Col, 801 N 6th St, Garden City
Mandeville, George, Major, Crown Bldg, Dodge City
Overholser, Norman H, Capt, 115½ S Main St, El Dorado
Rabe, Melvin A, 1st Lt, Kansas Univ Hospital, Kansas City
Schwartz, Willard C, Major, 1919 Poylitz, Manhattan
Sutherland, Earl W Jr, Capt, Burlingame
Voorhees Gordon S, Capt, Univ of Kansas, Kansas City

Kentucky

Amos, B K, Capt, Princeton
Barnard, William H, Lt Col, Elizabethtown
Barr, Robert H, Col, 405 St Ann St, Owensboro
Bate, Richard A Jr, Capt, 2202 Sheffield Blvd, Louisville
Bell, Joseph C, Lt Col, Glenview, Louisville
Bingham, Roy E, Capt, Box 322, Route 6, Louisville
Booth, Thomas E, Major, Louisville City Hosp, Louisville
Brown, Leonidas A, 1st Lt, Williamsburg
Chumley, Jack L, Major, Louisville City Hosp, Louisville
Clifton, Wilburn P, Capt, 234 Sycamore St, Barbourville
Coons, Albert H, Major, 132 1st Ave, Gloversville
Cowan, Albert W, Capt, N 25th St, Middlesboro
Eckenhoff, James E, Capt, Good Samaritan Hosp, Lexington
Gilbert, James T Jr, Major, 953 Magnolia, Bowling Green
Gray, Laman A, Major, 610 Upland Rd, Louisville
Hall, Charles N, 1st Lt, 301 W Mount Vernon St, Somerset
Hancock, James D, Lt Col, 80 Valley Rd, Louisville
Heitz, Raymond, Major, 1732 Deer Lane, Louisville
Holt, Howard P, Capt, Twila
Jakeman, Harry A, Capt, W Main St, Stanford
Johnson, James E, Lt Col, Jenkins
McIlroy, Daniel B Jr, Major, Grundy Ave, Springfield
Murray, Hershell B, Capt, West Liberty
Nichols, William E, Capt, Manchester
Noble, Vernon A, Capt, 3614 Del Park Terrace, Louisville
Pennington, Clarke P, Capt, 2211 Glenmary Ave, Louisville
Rompf, John H, Lt Col, % Eastern State Hosp, Lexington
Stevenson, Richard V, 1st Lt, 120 Iroquois Ct, Lexington
Weddle, Richard H, Major, 133 N Maple St, Somerset
Work, C E, Lt Col, 122 N Ft Thomas Ave, Fort Thomas

Louisiana

Abramson, Paul D, Major, 808 Jodan St, Shreveport
Atkinson, Robert H, Capt, 3750 Youree Dr, Shreveport
Bishop, Clarence A, Lt Col, 986 Harding Dr, New Orleans
Browning, William H, Capt, 1717 Marshall St, Shreveport
Broyles, Joe E, Major, 3936 Baltimore St, Shreveport
Cabran, Louis R, Capt, 5902 Dauphine St, New Orleans
Campbell, Nicholas M, Capt, Mercy Hosp, New Orleans
Chalstrom, Harry E Jr, 1st Lt, 2202 Gen Pershing St, N O
Chavez, Stephen A, Capt, 2317 Broadway Ave, New Orleans
Davidge, Lucious L, Major, 940 Margaret Place, Shreveport
Deddens, Lloyd E, Capt, Apt 5B Groves St, DeRidder
Edwards, Arthur M, Major, Bernice
Ellington Joseph C, Major, Alto
Everett, Peter 3d, Capt, 900 Independence St, New Orleans
Gahagan, Harry Q, 1st Lt, Coushatta
Guidry, Edwin R, Major, 720 Broadway, New Orleans
Gwin, John V, Major, 7031 Freret St, New Orleans
Hardy, W R, Lt Col, 626 Maison Blanche Bldg, New Orleans
Ilgenfritz, Hugh C, Major, 2656 Napoleon Ave, New Orleans
LaNasa, James J, Major, Charity Hosp, New Orleans
Landry, Joseph D, Capt, 1112 Union Bldg, New Orleans
Lorenzen, Lee H, Capt, 1636 Broadway, New Orleans
McCook, Walter W Jr, Major, 911 Wilkinson St, Shreveport
Meyer, Harry, Major, 2231 Calhoun St, New Orleans
Nelken, Bernard E, Major, 2027 Kleinert Ave, Baton Rouge
Nix, James T, Capt, 2140 Carrollton Ave, New Orleans
Pardue, Cleveland H, Capt, Vivian
Pasternack, Morris, Major, Charity Hosp, New Orleans
Rand, Paul K, Major, Vance Ave, Alexandria
Rizzo, Frank P, Lt Col, 320 Grammont St, Monroe
Rosen, Warren L, Major, 7030 Birch St, New Orleans
Rouglet, Robert E, Major, 2737 Ursuline Ave, New Orleans
Rozier, John S III, Capt, Leesville
Sabatier, Joseph A Jr, Capt, Eunice
Shu-han, Morris, Major, 8232 Pritchard Pl, New Orleans
Storck, A H, Lt Col, 1458 Nashville Ave, New Orleans
Treadway, James L Jr, Capt, 38 Louisiana Ave, Alexandria
Troxler, Ferdinand A, Major, Reserve
Vincent, Francis J, Capt, Marksville
Weilbaecher, J O Jr, Lt Col, 5826 Clara St, New Orleans
Wexberg Leopold E, Major, 1233 Nashville, New Orleans
Winder, Paul W, Major, Highland Clinic, Shreveport
Vasquez, Guillermo, 1st Lt, Franklin
Woodhouse Keith W, Col, Vinton

Maine

Greene, Merrill S F, Major, 466 Main St, Lewiston
Howard, Henry M, Major, 105 Franklin St, Rumford
Johnson, Albert C, Capt, 90 Prospect St, Portland
Proctor, Thomas E, Capt, 8 McKnown St, Boothby Harbor
Sumner, Charles M, Capt, West Sullivan

PHYSICIANS SEPARATED FROM SERVICE

Maryland

Bordley John E., Lt. Col., 319 Tunbridge Rd., Baltimore.
Brack, Charles B., Major, 302 Underwood Ct., Baltimore.
Callahan, Timothy A., Capt., Bel Air.
Cohen, Lawrence J., Major, 2510 Keyworth Ave., Baltimore.
Cutts, Morgan, Major, 211 Wendover Rd., Baltimore.
Dickey, Francis G., Lt. Col., 600 Winans Way, Baltimore.
Fielding-Reid, F., Capt., Maryland Club, 1 E. Eager, Baltimore.
George, Joseph M., Capt., Sudersville.
Goodman, Howard, Lt. Col., 511 Wilton Rd., Towson.
Harvey, Abner M., Major, Johns Hopkins Hosp., Baltimore.
Henning, Emil H. Jr., Capt., 601 Winans Way, Baltimore.
King, John T., Col., 219 W. Lanvale St., Baltimore.
Lambert, Richard H., Lt. Col., Johns Hopkins Hosp., Baltimore.
Mays, Howard B., Major, 4313 Marble Hall Rd., Baltimore.
Quinn, William C., Capt., Main St. Ext., Crisfield.
Revell, Samuel T. R. Jr., Capt., 3814 Fernhill Ave., Baltimore.
Shapiro, Abraham A., Major, 6711 Park Hgts. Ave., Baltimore.
Stafford, E. S., Lt. Col., 3722 Tudor Arms Ave., Baltimore.
Strong, Paul S., Major, Sydenham Hosp., Baltimore.
Vollmer, Donald H., Major, Wash. Sanitarium, Takoma Park.

Massachusetts

Adams, Ronald W., Capt., 132 Homer, Newton.
Ainsworth, Leonard B., Capt., 351 Essex St., Lawrence.
Andren, Henry E., Major, 45 W. Newton St., Boston.
Aunfrance, Otto E., Major, 374 Commonwealth Ave., Boston.
Axelrod, George, Major, 302 Chestnut St., Clinton.
Bartlett, Marshall K., 1st Lt., 43 Chestnut St., Dedham.
Betts, Reeve H., Major, 51 Devoy Rd., Newton Center.
Bland, Edward F., Lt. Col., Mass. Gen. Hosp., Boston.
Bloomenthal, Abraham P., Capt., 7 Banks St., Waltham.
Budington, Harold F., Lt. Col., 958 State St., Springfield.
Churchill, Edward D., Col., 269 Prospect St., Belmont.
Clifford, Milton H., Lt. Col., 17 Lowell St., Cambridge.
Curtis, Sprague, Capt., Westfield State Hosp., Westfield.
Dibbins, Samuel A., Major, 528 Andover St., Lowell.
Dickson, William A., 1st Lt., Waton.
Dowd, George C., Capt., 87 Norfolk St., Worcester.
Ellis, Daniel S., Capt., Mass. GH Fruit St., Boston.
Farren, Edward B., Capt., 108 Moraine St., Brockton.
Fish, James E., Col., Melrose.
Flake, Carlyle G., Lt. Col., 9 Bryon St., Boston.
Ford, Richard, Major, 9 Riedesel Ave., Cambridge.
Galuszka, Bronislaus A., Capt., 895 Front St., Chicopee Falls.
Goldberg, George, Capt., 138 Tappan St., Brookline.
Greenfield, Irving, Capt., 41 Burbank St., Boston.
Gregg, Ward I., Major, Gerry's Landing, Cambridge.
Gregory, Harold E., Capt., 34 Washington St., Beverly.
Halsted, James A., Major, 759 High St., Dedham.
Harris, Casimir P., Capt., 21 Duffield Rd., Auburndale.
Hart, Leon M., Capt., 94 Washington St., Weymouth.
Hovenanian, Michael S., Capt., 97 Jackson St., Cambridge.
Kabler, Paul W., Major, 127 Washington St., Brighton.
Karp, Isadore A., 1st Lt., 153 Shurtleff St., Chelsea.
Kasparian, Karl D., Lt. Col., 310 Talbot Ave., Dorchester.
Kelley, Sylvester B., Major, 34 Exeter St. W., Newton.
King, Donald S., Col., 111 Holland Rd., Brookline.
Kranes, Alfred, Major, 38 Carleton Circle, Belmont.
Lasalle, Arthur, Capt., 38 Rock St., Fall River.
Lawrence, Knowles B., Capt., 171 Bay State Rd., Boston.
LeBeaux, Lincoln, Capt., Shrewsbury.
Leighton, L. H., Major, 1802 Massachusetts Ave., Cambridge.
Levine, Julius, Capt., 253 Norfolk St., Dorchester.
Mahoney, Frank A. Jr., Major, 16 Harriet St., Springfield.
Majetta, Angelo L., Capt., 408 Main St., Winchester.
Myers, Jack D., Lt. Col., 721 Huntington Ave., Boston.
Meltzer, Adolph, Capt., 233 May St., Worcester.
O'Hara, John L., Capt., 136 Hunnewell Ave., Newton.
Parsons, Langdon, Major, 57 Dudley Rd., Newton Center.
Press, Harry A., Capt., 598 Tyler St., Pittsfield.
Rutledge, David I., Major, 605 Commonwealth Ave., Boston.
Sahler, Otto D., Major, Mass. Gen. Hosp., Boston.
Sarris, Spiros P., Major, 152 School St., Lowell.
Schwartz, Harry H., Major, 562 Broadway, Everett.
Settlage, Arnold F. E., Capt., 244 High St., Newburyport.
Shaughnessy, John R., Major, 24½ Winter St., Salem.
Sisson, Milton M., Capt., 750 Barnardston Rd., Greenfield.
Sneiderman, Robert, Capt., 1 Atlantic St., Lynn.
Staples, Oscar S., Major, 136 Milton Ave., Hyde Park.
Suby, Howard I., Major, 137 Englewood Ave., Brookline.
Thomas, Edwin B., Capt., Fitchburg.
Thompson, Leonard B., Capt., 346 Elm St., Gardner.
Ulfelder, Howard, Capt., 27 Shakan Rd., Belmont.

Massachusetts—Continued

Verstandig, Charles C., Major, 220 Chelsea St. E., Boston.
Wallace, W. M., Capt., Children's Hosp., 300 Longwood, Boston.
Weitz, Mark, Capt., 1307 Commonwealth Ave., Allston.
Welch, William J., Capt., 119 Winthrop St., Taunton.
Whitcomb, Austin E., Capt., 21 Bardwell St., Hadley Falls.
Yens, Otto C., Lt. Col., 22 Forest St., Cambridge.
Zoll, Paul M., Major, 25 Peterborough St., Boston.

Michigan

Andrews, Nelson A. C., Capt., 310 E. Main St., Flushing.
Bader, Benjamin H., Lt. Col., 3281 Pasadena, Detroit.
Belanger, William G., Capt., 92 Orchestra Pl., Detroit.
Boccaccio, John L., Capt., 5054 Van Dyke, Detroit.
Boucher, Roman E., Capt., 2830 Glenwood Ave., Royal Oak.
Brown, Robert W., Capt., Detroit.
Buechner, Frederick W., Major, 100 Guest St., Battle Creek.
Carstensen, Vincent H., Capt., U. S. Marine Hosp., Detroit.
Chesluk, Herman M., Capt., 1983 Taylor, Detroit.
Chipman, Elwood M., Capt., 47 E. Chicago St., Quincy.
Claxton, Wilbert T., Capt., Britton.
Conger, Kyril B., Major, Univ. Hosp., Ann Arbor.
Corgill, Donald A., Major, 3079 W. Grand Blvd., Detroit.
Delbert, Stewart G., Capt., Wyandotte Gen. Hosp., Wyandotte.
De Vel, Leon, Lt. Col., 739 Plymouth Blvd. S. C., Grand Rapids.
Dorland, John A. C., Capt., 17 Court St., Lapeer.
Feldkamp, Lee E., Major, 508 Brower St., Ypsilanti.
Feldman, Paul H., Capt., 15036 Muirland St., Detroit.
Fellows, Kenneth E., Capt., 1238 Alexander S.E., Grand Rapids.
Flint, Charles H., Major, Hart.
Florentz, Theodore R., Capt., 8848 Buhl Ave., Detroit.
Free, Harry W., Col., Grace Hosp., Detroit.
Frohlich, Moses M., Lt. Col., Univ. Hosp., Ann Arbor.
Gillespie, S. M., Capt., 25313 Ingleside, RFD 5, Birmingham.
Gowen, Guy H., Lt. Col., 1101 Baldwin Ave., Ann Arbor.
Gutman, Emil, Capt., 2078 Mill St., Lincoln Park.
Hansen, Carl M., Capt., 205 Bellvue, Stanton.
Harley, Garth H., Capt., 7620 Kipling, Detroit.
Harryman, James E., Capt., 118 S. Washington Ave., Lansing.
Horowitz, Samuel F., Major, 620 N. Madison St., Bay City.
Huff, Ralph H., Capt., Receiving Hosp., Detroit.
Husted, Franklin P., Major, 803 N. McLellan St., Bay City.
Jones, Tyre K., Capt., 118 W. Green, Marshall.
Kavanaugh, William R., Capt., 442 Stuart Ave., Kalamazoo.
Kitzmiller, John L., Capt., 68 E. Willis, Detroit.
Knaggs, Earl J., Capt., 13179 Phelps Blvd., Wyandotte.
Konopa, John F., Major, Manistee.
Kuhns, Milton L., Capt., 2755 Bronson Blvd., Kalamazoo.
Laupe, F. A., Major, 155 Elmhurst Ave., Highland Park.
Lemen, Charles E., Capt., 521 Washington St., Traverse City.
Lindenfeld, Frederick H., Capt., 611 State St., St. Joseph.
Lipschutz, Louis S., Major, Eloise Hosp., Eloise.
Lowell, Vivion F., Major, Ypsilanti State Hosp., Ypsilanti.
McColl, Charles W., Capt., Wyandotte.
McNickle, Jerry H., 1st Lt., 1303 Delaware Ave., Detroit.
MacIntyre, D. S., Lt. Col., 714 Linda Vista Ave., Ann Arbor.
Meier, Harold J., Major, 70 N. Hudson St., Coldwater.
Merritt, Harry E., Capt., 6533 16th St., Detroit.
Miller, Harry, Major, 1130 Parker Ave., Detroit.
Miller, K. T., Lt. Col., 746 E. Division St., Cadillac, Wexford.
Mosier, Dwight J., Capt., 307 W. Midland St., Bay City.
Muehlig, George K., Capt., 1604 Grauger Ave., Ann Arbor.
Ogilvie, Gordon D., Capt., 255 1st St., Manistee.
Ott, Harold A., Major, 19511 Shresbury Rd., Detroit.
Pauli, Theodore H., Lt. Col., 161 Illinois, Pontiac.
Pearson, Stanley M., Capt., 501 W. Jenny, Bay City.
Phillips, Francis J., Capt., Herman Kietev Hosp., Detroit.
Prentice, Edwin W., Capt., 22213 Olmstead Ave., W. Dearborn.
Purves, William L., Major, 222 E. 1st St., Flint.
Quarton, Albert E. Jr., Capt., University Hosp., Ann Arbor.
Ross, Hyman, Capt., 2676 Webb, Detroit.
Richards, Frank D., Capt., DeWitt.
Rogers, John D., Lt. Col., 1232 W. Maple St., Adrian.
Rowell, Wilfred J., Capt., 18633 Puritan Ave., Detroit.
Schlecte, Irwin C., Major, 326 Walnut, Rochester.
Shepherd, Walter F., Capt., Ross Apt. 5, Owosso.
Smith, Fred R., Capt., 17501 Woodinham Dr., Detroit.
Tofteland, Elmer H., Capt., 902 Woodside Dr., Flint.
Vail, Harry F., Capt., 408 W. Jenny St., Bay City.
Watson, Bernard A., Lt. Col., 114 E. Locust St., Three Oaks.
Wheeler, Stewart C., Capt., 17554 Ohio, Detroit.
Wright, Leonard D., Capt., Rt. 2, Box 50, Jackson.
Zbudowski, Alexander S., Capt., 3400 Evaline Ave., Hamtramck.
Zinn, August K., Capt., 55 Post Rv., Battle Creek.

PHYSICIANS SEPARATED FROM SERVICE

Minnesota

Aling, Charles A., Major, 2920 Victory Mem. Dr., Minneapolis.
 Barker, John D., Major, 37 Wetzel St., Warren.
 Beck, Harvey O., Lt. Col., St. Paul.
 Belzer, Meyer S., Lt. Col., 2915 40th Ave., South Minneapolis.
 Benjamin, Edwin G., Lt. Col., 2202 Pleasant Ave., Minneapolis.
 Black, Earl J., Capt., Commodore Hotel St., St. Paul.
 Bloom, Norman B., Major, Minneapolis.
 Butter, John R., Capt., 6630 Normandale Rd., Minneapolis.
 Caldwell, Hayes W., Capt., 225 4th Ave., Rochester.
 Clapp, Stewart, 1st Lt., 5319 Oakley St., Duluth.
 Chalmers, James H. Jr., Major, Madison.
 Clarke, Edward T., Capt., Mayo Clinic, Rochester.
 Clarke, William O., Major, 1929 7th Ave., Hibbing.
 Emond, Joseph S., Major, Farmington.
 Geissler, G. A., Major, V. C. C. Co., 2713 Cp. NP-1 Hinckley.
 Goehrs, Gilman H., Lt. Col., 1008 8th Ave. S., St. Cloud.
 Hankerson, Robert G., Capt., Minnesota Lake.
 Hanley, James L. Jr., Major, Mayo Clinic, Rochester.
 Hartmann, Clarence M., Major, Fairfax.
 Hartman, Jack, Capt., 704 15th Ave. S.E., Minneapolis.
 Hertz, Myron J., Capt., 1153 Summit Ave., St. Paul.
 Holland, Cleon R., Major, Rochester.
 Howe, Rulon F., Lt. Col., 210 6th St. S.W., Rochester.
 Hultkrans, Rudolph E., Capt., 4823 Dupont Ave. S., Minneapolis.
 Hunt, Robert S., Major, Fairmont.
 Johnson, John W., Major, Kerkhoven.
 Kaasa, Laurin J., Capt., Albert Lea.
 Kapsner, Alfred T., Capt., Pierz.
 Katzovitz, Hyman, Capt., 158 Eaton Ave., St. Paul.
 Kinports, Edward B., Capt., 928 3d St., International Falls.
 Knutson, Lewis A., Capt., Belgrade.
 Lind, Carl J. Jr., Lt. Col., 3104 45th Ave. S., Minneapolis.
 McGroarty, Brian J., Major, Easton.
 Meyer, Wallace M., Capt., Rollingstone.
 Mitchell, Mancel T., Major, Minneapolis.
 Moir, William W. Jr., Major, 316 W. 50th St., Minneapolis.
 Murray, Robert A., Lt. Col., Aitkin.
 O'Brien, John P., Lt. Col., The Mayo Foundation, Rochester.
 O'Leary, John H., Capt., 509 7th St. N., Staples.
 Plotke, Harry L., Capt., 1st Natl. Bank Bldg., Little Falls.
 Polski, Paul G., Capt., 914 Wakefield Ave., St. Paul.
 Selin, Goldon, Capt., Oak Terrace.
 Shima, George J., Capt., Montgomery.
 Strickler, Jacob H., Capt., Brainerd.
 Teisberg, John E., Capt., Middle River.
 Wasson, Loren F., Capt., Alexandria.

Mississippi

Armstrong, James H., Lt. Col., Oxford.
 Brackstone, LeRoy B., Capt., Iuka.
 Burt, Lawrence W., Major, 826 5th Ave., Laurel.
 Davis, Jesse T., Lt. Col., Speedway, Corinth.
 Feemster, Lucien C., Major, 321 N. Green St., Tupelo.
 Fogel, Morris, Lt. Col., Vet. Administration Facility, Biloxi.
 Gilding, Joseph P., Capt., 145 N. Main St., Vicksburg.
 Hall, William M., Major, % Mrs. L. B. Robinson, Centreville.
 Henry, Eugene M., Capt., Charleston.
 Jackson, Claude A., Capt., 111 N. Wells St., Kosciusko.
 Jackson, Paul, Major, Liberty.
 Laird, Earl L., Major, Union.
 McAmis, Elton L., Capt., Port Gibson.
 Massengill, Frank C., Capt., 321 W. Chippewa St., Brookhaven.
 Moore, Daniel H. Sr., Capt., 2506 29th Ave., Meridian.
 Murfee, John A., Major, Box 338, Amory.
 Pearce, Leroy S., 1st Lt., Falkner.
 Pritchard, Clarence D., Major, Marks.
 Purser, Thomas Jr., Major, McComb.
 Snelling, Murdock M., Major, 712 E. Beach, Gulfport.
 Ward, Charles E., Major, Jackson.
 Watkins, Charles, Capt., Shaw.
 Williams, Howard S., Major, Hattiesburg.
 Williams, Thomas R., Capt., Batesville.
 Witte, Wallie S., Capt., 201 Washington St., Leland.

Missouri

Aaron, George, Capt., 5831 Rockhill Rd., Kansas City.
 Alvis, Edmund B., Major, 308 N. 6th St., St. Louis.
 Arrowsmith, William R., Capt., 4539 Parkview Pl., St. Louis.
 Backlar, Joseph, Major, 1025 McKnight Rd., Richmond Hgts.
 Barnes, Seth S., Major, Owensville.
 Bartlett, Robert W., Lt. Col., 607 N. Grand Ave., St. Louis.
 Burford, T. H., Major, 600 S. Kingshighway St., St. Louis.
 Carey, William A. Jr., Capt., St. Louis City Hosp., St. Louis.

Missouri—Continued

Chastain, Maurice W., Capt., Kansas City.
 Cox, Kenneth E., Capt., 45 E. 55th Terr., Kansas City.
 Curran, Desmond, Capt., 925 Grand Ave., Kansas City.
 Donley, Robert R., Capt., 633 Atlanta, Webster Groves.
 Darnell, Thomas F. B., Major, Macon.
 Dowd, James F., Capt., 7220 W. Park Ave., Richmond Heights.
 Eberhard, Theodore P., Col., 801 W. Ash St., Columbia.
 Ellis, Coburn H., Capt., Sweet Springs.
 Elson, Julius, Capt., 7330 Pershing St., St. Louis.
 Evans, Ezra L. Jr., Lt. Col., 1103 Cherry St., Springfield.
 Freedman, Harold, Major, 7246 Pershing Ave., University City.
 Gamet, Joseph H., Lt. Col., 508 W. 8th St., Rolla.
 Hogue, Frank S., Major, 103 Ward Parkway, Kansas City.
 Hoilo, Vencel W., Capt., Firmin Desloge Hosp., St. Louis.
 Hopkins, Florian G., Major, Box 506, Gideon.
 Kelley, Gilbert B., Major, 1010 Wakefield Ave., Savannah.
 Kitchen, William M., Major, Woodland Hosp., Moberly.
 Kimes, Ira D., Capt., 403 S. Cherry, Cameron.
 Klein, Adelbert H., Major, 2632 S. Kingshighway, St. Louis.
 Kleykamp, Elmer A. Jr., Capt., 3628 Shaw Ave., St. Louis.
 Kotner, Lawrence M., Capt., 6610 Enright Ave., Univ. City.
 Leech, Charles A. Jr., Major, 718 Maryland, Columbia.
 Lo Piccolo, V. J., 1st Lt., 73 Lake Forest, Richmond Heights.
 McKinstry, Karl V., Capt., 105 S. 4th St., DeSoto.
 Mulligan, Leo V., Major, City Hosp. No. 1, St. Louis.
 Myers, Daniel W., Lt. Col., 5653 Waterman St., St. Louis.
 Myers, Robert M., Capt., 222 W. 67th St., Kansas City.
 Pareira, M. D., Major, Ellis Fischel State Cancer H., Columbia.
 Parker, Joe M., Major, Ellis Fischel Hosp., Columbia.
 Patton, John F., Lt. Col., 723 University Club Bldg., St. Louis.
 Robinson, George G., Capt., Humansville.
 Schwartz, Eugene J., Capt., 833 S. Weller, Springfield.
 Stockwell, A. L., Major, 625 Professional Bldg., Kansas City.
 Vandover, John T., Major, 3728 Arsenal St., St. Louis.
 Wedig, John H., Major, Barnes Hosp., St. Louis.
 Werner, William A., 1st Lt., 5573 Cates St., St. Louis.
 Wyatt, Lisle M., Capt., 4905 Holly St., Kansas City.

Montana

Bogardus, George M., Capt., 31 5th Ave., E. Kalispell.
 Donich, George M., Major, St. James Hosp., Butte.
 Eck, Raymond L., Capt., 612 Montana Bldg., Lewiston.
 Malee, John J., Capt., 215 Walnut St., Anaconda.
 Pearson, John A., Capt., Park Hotel Bldg., Livingston.

Nebraska

Campbell, Louis S., Major, 1602 Broadway, Scottsbluff.
 Civin, W. Harold, 1st Lt., 1412½ 24th St., Omaha.
 Crynes, Sylvester F., Major, 2010 N. 49th St., Omaha.
 Foote, Donovan B., Capt., Foote Bldg., Hastings.
 Grabow, Henry C., Major, 120 S. 44th St., Omaha.
 Hankins, Charles R., Capt., 5121 Erskine St., Omaha.
 Hervet, James W., Capt., Valparaiso.
 Kelley, William E., Capt., 4303 Woolworth Ave., Omaha.
 Lipp, Frank E., Major, 119 Chestnut St., Kimball.
 MacKenbrock, Frederick C., Lt. Col., Hotel Rome, Omaha.
 O'Donnell, Reynolds J., Capt., 2208 16th St., Columbus.
 Rich, Edward L., Major, Grand Island.
 Shamberg, Alfred H., Major, University Hosp., Omaha.
 Teply, Gene L., Capt., Howells.
 Young, George A. Jr., Lt. Col., 5228 Jones St., Omaha.

New Hampshire

Bennert, Harry W., Capt., 1485 Belmont St., Manchester.
 Hagerty, Edward D., Major, 4 Broad St., Nashua.
 Hubbard, Edward O. Jr., Capt., R. F. D. 1, Peterborough.
 McLeod, John K., Capt., 23 Elm St., Penacook.
 March, Luther A., Capt., 31 Berkeley St., Nashua.
 Miller, John H., Capt., 1388 N. Main St., Laconia.
 Milliken, Nathan T., Capt., Hitchcock Clinic, Hanover.
 Willson, Allan T., Major, Farmington.
 York, Charles L. Jr., Capt., 18 Winter St., Plymouth.
 Yudickey, Stanley W., Capt., 573 Spruce St., Manchester.

New Jersey

Amato, Romelo J., Capt., 370 LaFayette St., Newark.
 Baker, Banks S., Capt., 618 Benson St., Camden.
 Bar, Samuel, Major, 54 Main St., Englistown.
 Barbour, George E., Capt., 118 W. High St., Somerville.
 Barlow, George B., Capt., 157 Engle St., Englewood.
 Bayer, Eric C., Capt., 237 Franklin Ave., Cliffside Park.
 Berenson, Samuel J., Major, 1012 E. Jersey St., Elizabeth.
 Bettie, Ronald A., Major, Hackensack Hosp., Hackensack.

PHYSICIANS SEPARATED FROM SERVICE

New Jersey—Continued

Beyer, William, Lt. Col., 612 Undercliff Ave., Edgewater.
 Block, Milton, Capt., 342 Union Ave., Irvington.
 Board, Thomas P., 1st Lt., 294 Easton Ave., New Brunswick.
 Bonanno, Peter J., 1st Lt., 500 79th St., North Bergen.
 Bookrajan, Edward N., Capt., 8027 Hudson Blvd., N. Bergen.
 Booth, William K., Major, 304 William St., Boonton.
 Boquist, Walter A., Major, 380 Hudson St., Phillipsburg.
 Boylan, Mathew E., Capt., 2690 Blvd., Jersey City.
 Brauer, Selig L., Capt., 2012 Blvd., Jersey City.
 Burnett, Hayes J., Capt., 1 Hawthorne Pl., Montclair.
 Cassio, William L., 1st Lt., 125 Elm St., Montclair.
 Clark, Morris B. Jr., 1st Lt., 124 Roberts Ave., Haddonfield.
 Cooney, Raynald T., Capt., St. Francis Hosp., Trenton.
 Copleman, H. B., Capt., 111 Livingston Ave., New Brunswick.
 Cox, William T. R., Major, 345 S. Broad St., Elizabeth.
 Degenhardt, Ira H., Major, 114 S. 1st Ave., Highland Park.
 Dein, Harry L., Capt., 4 S. Plaza Pl., Atlantic City.
 DeSantis, Orazio J., Capt., 100 N. 2d St., Millville.
 Dimun, John T. Jr., Major, 960 S. Broad St., Trenton.
 English, Harrison F. III, Major, 10 Morningside Dr., Trenton.
 Enion, George A., Col., Sea Girt.
 Franklin, H. J., Capt., Staff House, Med. Center, Jersey City.
 Freeman, Ray M., Lt. Col., 922 Orchard Terrace, Linden.
 Freyberger, George A., Capt., 36 Bonn Pl., Weehawken.
 Gilligan, Walter W., Major, Nutley.
 Glass, Harry L., Capt., 1009 Park Ave., Plainfield.
 Gordon, Norman W., Capt., 71 Cleveland Ave., Elizabeth.
 Grandin, Dean J., 1st Lt., 1073 Anderson Ave., Palisade.
 Greenberg, Solomon, Capt., 119 W. 28th St., Bayonne.
 Hagen, Walter H., Major, 671 Lincoln Ave., Orange.
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 Hollins, George G., Capt., 71 Cates Ave., Montclair.
 Hughes, Joseph F., Capt., 16 N. Broad St., Woodbury.
 Jones, William F., Capt., 1318 Broad St., Pleasantville.
 Joyner, Austin, Lt. Col., 27 Vincent St., Hillsdale.
 Kaycoff, Aaron J., Capt., 1063 North Ave., Elizabeth.
 Kollar, Charles S., Capt., 131 Lincoln Ave., Ridgewood.
 Kuder, Joseph M., Lt. Col., 104 Garden St., Mt. Holly.
 Kunderman, Philip J., Major, 215 Harper St., Highland Park.
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 Lavine, Samuel C., Capt., 88 Livingston Ave., New Brunswick.
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 Long, John F., Capt., 205 N. 4th St., Harrison.
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 Lippman, Harold E., Capt., 108 Elizabeth Ave., Newark.
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 McDonnell, George J., Capt., 80 W. Main St., Freehold.
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 Mazur, Edward F., Capt., 1255 Liberty St., Camden.
 Merlo, Frank V., Capt., 33 Prince St., Elizabeth.
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 Monaloy, Morris A., Capt., 24 Day St., Clifton.
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 Naidorff, Saul A., Capt., 421 W. 7th St., Plainfield.
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 Reinhardt, Warren I., Capt., 276 Springdale Ave., East Orange.
 Restaino, Charles F., Major, 465 Parker St., Newark.
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 Alderman, Henry R., Capt., Lewiston.
 Allen, Herbert B., Capt., 216 Halstead Ave., Harrison.
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 Alpert, Samuel, Capt., 620 Trinity Ave., Bronx.
 Alterman, Robert H., Capt., 86 Georgia Ave., Long Beach.
 Altman, Morris A., Capt., 5706 11th Ave., Brooklyn.
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 Aprile, Ignatius J., Capt., 32-43 83d St., Jackson Heights, L. I.
 Argue, John F., Capt., Lake St., Wilson.
 Bachrach, Edgar H., Capt., 565 Manhattan Ave., New York.
 Bakst, Hyman, Capt., 915 W. End Ave., New York.
 Balser, Benjamin H., Lt. Col., 44 E. 67th St., New York.
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 Bauer, Paul H., 1st Lt., Grasslands Hosp., Valhalla.
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 Berkowitz, Sidney B., 1st Lt., 1743 E. 4th St., Brooklyn.
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 Bertuglia, Sebastian, Capt., 131 Linden St., Brooklyn.
 Bick, Malcolm W., Capt., 25 Minetta Lane, New York.
 Biller, Samuel B., Major, 450 St. John's Pl., Brooklyn.
 Bing, R. J., Capt., Arlington Ave. & W. 245th St., Riverdale.
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 Block, Harry H., Capt., 265 Quentin Rd., Brooklyn.
 Bobeck, Charles J., Capt., 48 N. Main, Cannaduaque.
 Bolitho, Thomas B., Capt., Swenden-Walker Rd., Brockport.
 Bloom, Bernard, Capt., 2153 E. 26th Ct., Brooklyn.
 Bluestone, N. B., Major, Crompond Rd., Yorktown Heights.
 Bochow, George A., Capt., 29 Pearl St., Mount Vernon.
 Bock, Fred, Major, 88-32 150th St., Jamaica.
 Bogue, Robert M., Capt., 140 Union Ave., Lynbrook.
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 Bosworth, Boardman M., Major, 915 Palmer Rd., Bronxville.
 Botwin, Nathan, Major, 504 Grand St., New York.
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 Bray, Harold P., Capt., 30-48 36th St., Long Island City.
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 Cassara, Thomas, Major, Letchworth Village, Thiells.
 Chakales, Harry J., Capt., 34 Plaza St., Brooklyn.
 Chapman, David H., Major, 1929 E. Genesee St., Syracuse.
 Charlton, Alex, Capt., 168th St. & Gerard Ave., Bronx.
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 Chillemi, Philip A., Capt., 146-08 Queens Ave., Flushing.
 Cibelli, Ludwig J., Capt., 200 E. 18th St., Brooklyn.
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 Cryst, John E., Capt., 2254 Main St., Buffalo
 Cullen, Milton L., Capt., 622 W 168th St., New York
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 Dack, Simon, Capt., 174 W 76th St., New York
 Dake, Charles M. Jr., Capt., Temperance House, Niagara Falls
 Dann, Sidney, Capt., 1700 E 7th St., Brooklyn
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 Davis, William, Capt., 27 Park Pl., Great Neck
 Degensheim, George A., Capt., 1421 E 7th St., Brooklyn
 Delalla, Emanuel, Lt. Col., 42 Brookline Dr., Utica
 de Rouville, William H., Capt., 190 Milner Ave., Albany
 deSiervo, Thomas G., Capt., 1330 Odell St., Bronx
 Dickinson, Meredith M., Capt., 270 Seamen Ave., New York
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 Dooneief, Alfred S., Major, 175 Eastern Parkway, Brooklyn
 Dormont, Richard E., Capt., 123 E 35th St., Brooklyn
 Dornberger, George R., Major, Troy
 Dorsey, John J., Capt., 321 E 42d St., New York
 Doubilet, Henry, Capt., 25 E 86th St., New York
 Douglas, Edward W., Major, 285 Oxford St., Rochester
 Douglass, Edwin H. Jr., Capt., 286 Liberty St., Newburgh
 Driggs, Marshall F., Capt., 50 W 67th St., New York
 Durante, Dante V., Capt., 3200 Decatur Ave., Bronx
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 Earl, Alfred R., Major, Fayetteville
 Eggert, Edward T., Major, Knowlesville
 Eisenstater, Desider, Capt., 115 Logan St., Brooklyn
 Engster, Henry C., Capt., 186 2d Ave., N. Troy
 Errico, Frank J., Capt., 95 Washington Ave., Suffern
 Eustace, Charles G., Major, 320 East St., Buffalo
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 Fausel, Everett G., Major, 88-15 192d St., Hollis
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 Feit, Leonard, Capt., Gouverneur Hosp., New York
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 Field, William H., Col., 67 Willow St., Brooklyn
 Finogola, John, Capt., 655 Main, Niagara Falls
 Fink, Benjamin, Capt., 242 Vernon Ave., Brooklyn
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 Gaudin, Albert L., Capt., 153 Eagle St., Brooklyn
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 Gutelius, Stanley K., Capt., 388 Magee Ave., Rochester
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A NATIONAL HEALTH PROGRAM

Message to Congress on a National Health Program from President Harry S. Truman

To the Congress of the United States:

In my message to the Congress of Sept. 6, 1945 there were enumerated in a proposed economic bill of rights certain rights which ought to be assured to every American citizen.

One of them was "the right to adequate medical care and the opportunity to achieve and enjoy good health." Another was the "right to adequate protection from the economic fears of . . . sickness. . . ."

Millions of our citizens do not now have a full measure of opportunity to achieve and enjoy good health. Millions do not now have protection or security against the economic effects of sickness. The time has arrived for action to help them attain that opportunity and that protection.

The people of the United States received a shock when the medical examinations conducted by the Selective Service System revealed the widespread physical and mental incapacity among the young people of our nation. We had had prior warnings from eminent medical authorities and from investigating committees. The statistics of the last war had shown the same condition. But the Selective Service System has brought it forcibly to our attention recently in terms which all of us can understand.

As of April 1, 1945 nearly 5,000,000 male registrants between the ages of 18 and 37 had been examined and classified as unfit for military service. The number of those rejected for military service was about 30 per cent of all those examined. The percentage of rejection was lower in the younger age groups and higher in the higher age groups, reaching as high as 49 per cent for registrants between the ages of 34 and 37. In addition, after actual induction, about a million and a half men had to be discharged from the Army and Navy for physical or mental disability, exclusive of wounds; and an equal number had to be treated in the armed forces for diseases or defects which existed before induction.

Among the young women who applied for admission to the Women's Army Corps there was similar disability. Over one third of those examined were rejected for physical or mental reasons.

These men and women who were rejected for military service are not necessarily incapable of civilian work. It is plain, however, that they have illnesses and defects that handicap them, reduce their working capacity or shorten their lives.

It is not so important to search the past in order to fix the blame for these conditions. It is more important to resolve now that no American child shall come to adult life with diseases or defects which can be prevented or corrected at an early age.

Medicine has made great strides in this generation, especially during the last four years. We owe much to the skill and devotion of the medical profession. In spite of great scientific progress, however, each year we lose many more persons from preventable and premature deaths than we lost in battle or from war injuries during the entire war.

We are proud of past reductions in our death rates. But these reductions have come principally from public health and other community services. We have been less effective in making available to all of our people the benefits of medical progress in the care and treatment of individuals.

In the past, the benefits of modern medical science have not been enjoyed by our citizens with any degree of equality. Nor are they today. Nor will they be in the future unless government is bold enough to do something about it.

People with low or moderate incomes do not get the same medical attention as those with high incomes. The poor have more sickness, but they get less medical care. People who live in rural areas do not get the same amount or quality of medical attention as those who live in our cities. Our new economic bill of rights should mean health security for all,

regardless of residence, station or race everywhere in the United States. We should resolve now that the health of this nation is a national concern; that financial barriers in the way of attaining health shall be removed; that the health of all its citizens deserves the help of all the nation.

There are five basic problems which we must attack vigorously if we would reach the health objectives of our economic bill of rights:

Distribution

1. The first has to do with the number and distribution of doctors and hospitals. One of the most important requirements for adequate health service is professional personnel—doctors, dentists, public health and hospital administrators, nurses and other experts. The United States has been fortunate with respect to physicians. In proportion to population it has more than any large country in the world, and they are well trained for their calling. It is not enough, however, that we have them in sufficient numbers. They should be located where their services are needed. In this respect we are not so fortunate. The distribution of physicians in the United States has been grossly uneven and unsatisfactory. Some communities have had enough or even too many; others have had too few. Year by year the number in our rural areas has been diminishing. Indeed, in 1940 there were thirty-one counties in the United States, each with more than a thousand inhabitants, in which there was not a single practicing physician. The situation with respect to dentists was even worse.

One important reason for this disparity is that in some communities there are no adequate facilities for the practice of medicine. Another reason, closely allied with the first, is that the earning capacity of the people in some communities makes it difficult if not impossible for doctors who practice there to make a living.

The demobilization of 60,000 doctors and of the tens of thousands of other professional personnel in the armed forces is now proceeding on a large scale. Unfortunately, unless we act rapidly, we may expect to see them concentrate in the places with greater financial resources and avoid other places, making the inequalities even greater than before the war. Demobilized doctors cannot be assigned. They must be attracted. In order to be attracted, they must be able to see ahead of them professional opportunities and economic assurances.

Inequalities in the distribution of medical personnel are matched by inequalities in hospitals and other health facilities. Moreover, there are just too few hospitals, clinics and health centers to take proper care of the people of the United States.

About 1,200 counties, 40 per cent of the total in the country, with some 15,000,000 people, have either no local hospital or none that meets even the minimum standards of national professional associations. The deficiencies are especially severe in rural and semirural areas and in those cities where changes in population have placed great strains on community facilities. I want to emphasize, however, that the basic problem in this field cannot be solved merely by building facilities. They have to be staffed; and the communities have to be able to pay for the services. Otherwise the new facilities will be little used.

Maternal and Child Care

2. The second basic problem is the need for development of public health services and maternal and child care. The Congress can be justifiably proud of its share in making recent accomplishments possible. Public health and maternal and child health programs already have made important contributions to national health. But large needs remain. Great areas of our country are still without these services. This is especially true among our rural areas; but it is true also in far too many urban communities.

Although local public health departments are now maintained by some 18,000 counties and other local units, many of these have only skeleton organizations, and approximately 40,000,000 citizens of the United States still live in communities lacking full time local public health service. At the recent rate of progress in developing such service, it would take more than a hundred years to cover the whole nation.

If we agree that the national health must be improved, our cities, towns and farming communities must be made healthful places in which to live through provision of safe water systems, sewage disposal plants and sanitary facilities. Our streams and rivers must be safeguarded against pollution. In addition to building a sanitary environment for ourselves and for our children, we must provide those services which prevent disease and promote health.

Services for expectant mothers and for infants, care of crippled or otherwise physically handicapped children and inoculation for the prevention of communicable diseases are accepted public health functions. So too are many kinds of personal services such as the diagnosis and treatment of widespread infections like tuberculosis and venereal disease. A large part of the population today lacks many or all of these services.

Our success in the traditional public health sphere is made plain by the conquest over many communicable diseases. Typhoid fever, smallpox and diphtheria—diseases for which there are effective controls—have become comparatively rare. We must make the same gains in reducing our maternal and infant mortality, in controlling tuberculosis, venereal disease, malaria and other major threats to life and health. We are only beginning to realize our potentialities in achieving physical well-being for all our people.

Research and Education

3. The third basic problem concerns medical research and professional education. We have long recognized that we cannot be content with what is already known about health or disease. We must learn and understand more about health and how to prevent and cure disease.

Research—well directed and continuously supported—can do much to develop ways to reduce those diseases of body and mind which now cause most sickness, disability and premature death—diseases of the heart, kidneys and arteries, rheumatism, cancer, diseases of childbirth, infancy and childhood, respiratory diseases and tuberculosis. And research can do much toward teaching us how to keep well and how to prolong healthy human life.

Cancer is among the leading causes of death. It is responsible for over 160,000 recorded deaths a year and should receive special attention. Though we already have the National Cancer Institute of the Public Health Service, we need still more coordinated research on the cause, prevention and cure of this disease. We need more financial support for research and to establish special clinics and hospitals for diagnosis and treatment of the disease, especially in its early stages. We need to train more physicians for the highly specialized services so essential for effective control of cancer.

There is also special need for research on mental diseases and abnormalities. We have done pitifully little about mental illnesses. Accurate statistics are lacking, but there is no doubt that there are at least two million persons in the United States who are mentally ill and that as many as ten million will probably need hospitalization for mental illness for some period in the course of their lifetime. A great many of these persons would be helped by proper care. Mental cases occupy more than one half of the hospital beds at a cost of about 500 million dollars per year, practically all of it coming out of taxpayers' money. Each year there are 125,000 new mental cases admitted to institutions. We need more mental disease hospitals, more outpatient clinics. We need more services for early diagnosis, and especially we need much more research to learn how to prevent mental breakdown. Also we must have many more trained and qualified doctors in this field.

It is clear that we have not done enough in peacetime for medical research and education in view of our enormous resources and our national interest in health progress. The

money invested in research pays enormous dividends. If any one doubts this, let him think of penicillin, plasma, DDT powder and new rehabilitation technics.

Cost of Medical Care

4. The fourth problem has to do with the high cost of individual medical care. The principal reason why people do not receive the care they need is that they cannot afford to pay for it on an individual basis at the time they need it. This is true not only for needy persons. It is also true for a large proportion of normally self-supporting persons.

In the aggregate all health services—from public health agencies, physicians, hospitals, dentists, nurses and laboratories—absorb only about 4 per cent of the national income. We can afford to spend more for health. But 4 per cent is only an average. It is cold comfort in individual cases. Individual families pay their individual costs and not average costs. They may be hit by sickness that calls for many times the average cost—in extreme cases for more than their annual income. When this happens they may come face to face with economic disaster. Many families, fearful of expense, delay calling the doctor long beyond the time when medical care would do the most good. For some persons with very low income or no income at all we now use taxpayers' money in the form of free services, free clinics and public hospitals. Tax-supported, free medical care for needy persons, however, is insufficient in most of our cities and in nearly all of our rural areas. This deficiency cannot be met by private charity or the kindness of individual physicians. Each of us knows doctors who work through endless days and nights, never expecting to be paid for their services because many of their patients are unable to pay. Often the physician spends not only his time and effort but even part of the fees he has collected from patients able to pay, in order to buy medical supplies for those who cannot afford them. I am sure that there are thousands of such physicians throughout our country. They cannot, and should not, be expected to carry so heavy a load.

Compensation

5. The fifth problem has to do with loss of earnings when sickness strikes. Sickness not only brings doctor bills; it also cuts off income. On an average day there are about 7 million persons so disabled by sickness or injury that they cannot go about their usual tasks. Of these, about 3¼ millions are persons who, if they were not disabled, would be working or seeking employment. More than one half of these disabled workers have already been disabled for six months; many of them will continue to be disabled for years, and some for the remainder of their lives. Every year four or five hundred million working days are lost from productive employment because of illness and accident among those working or looking for work—about forty times the number of days lost because of strikes on the average during the ten years before the war. About nine tenths of this enormous loss is due to illness and accident that is not directly connected with employment and is therefore not covered by workmen's compensation laws.

These, then, are the five important problems which must be solved if we hope to attain our objective of adequate medical care, good health and protection from the economic fears of sickness and disability.

To meet these problems, I recommend that the Congress adopt a comprehensive and modern health program for the nation, consisting of five major parts—each of which contributes to all the others.

Construction

First: Construction of hospitals and related facilities. The federal government should provide financial and other assistance for the construction of needed hospitals, health centers and other medical, health and rehabilitation facilities. With the help of federal funds it should be possible to meet deficiencies in hospital and health facilities so that modern services—for both prevention and cure—can be accessible to all the people. Federal financial aid should be available not only to build new facilities where needed but also to enlarge or modernize those we now have.

In carrying out this program there should be a clear division of responsibilities between the states and the federal government. The states, localities and the federal government should share in the financial responsibilities. The federal government should not construct or operate these hospitals. It should, however, lay down minimum national standards for construction and operation and should make sure that federal funds are allocated to those areas and projects where federal aid is needed most. In approving state plans and individual projects, and in fixing the national standards, the federal agency should have the help of a strictly advisory body that includes both public and professional members. Adequate emphasis should be given to facilities that are particularly useful for prevention of diseases—mental as well as physical—and to the coordination of various kinds of facilities. It should be possible to go a long way toward knitting together facilities for prevention with facilities for cure, the large hospitals of medical centers with the smaller institutions of surrounding areas, the facilities for the civilian population with the facilities for veterans. The general policy of federal-state partnership which has done so much to provide the magnificent highways of the United States can be adapted to the construction of hospitals in the communities which need them.

Expansion of Health Services

Second: Expansion of public health, maternal and child health services. Our programs for public health and related services should be enlarged and strengthened. The present federal-state cooperative health programs deal with general public health work, tuberculosis and venereal disease control, maternal and child health services, and services for crippled children. These programs were especially developed in the ten years before the war and have been extended in some areas during the war. They have already made important contributions to national health, but they have not yet reached a large proportion of our rural areas, and in many cities they are only partially developed.

No area in the nation should continue to be without the services of a full time health officer and other essential personnel. No area should be without essential public health services or sanitation facilities. No area should be without community health services such as maternal and child health care. Hospitals, clinics and health centers must be built to meet the needs of the total population and must make adequate provision for the safe birth of every baby, and for the health protection of infants and children.

Present laws relating to general public health, and to maternal and child health, have built a solid foundation of federal cooperation with the states in administering community health services. The emergency maternity and infant care program for the wives and infants of servicemen—a great wartime service authorized by the Congress—has materially increased the experience of every state health agency and has provided much needed care. So too have other wartime programs such as venereal disease control, industrial hygiene, malaria control, tuberculosis control and other services offered in war essential communities. The federal government should cooperate by more generous grants to the states than are provided under present laws for public health services and for maternal and child health care. The program should continue to be partly financed by the states themselves and should be administered by the states. Federal grants should be in proportion to state and local expenditures and should also vary in accordance with the financial ability of the respective states.

The health of American children, like their education, should be recognized as a definite public responsibility. In the conquest of many diseases prevention is even more important than cure. A well rounded national health program should therefore include systematic and widespread health and physical education and examinations, beginning with the youngest children and extending into community organizations. Medical and dental examinations of school children are now inadequate. A preventive health program, to be successful, must discover defects as early as possible. We should therefore see to it that our health programs are pushed most vigorously with the youngest section

of the population. Of course, federal aid for community health services—for general public health and for mothers and children—should complement and not duplicate prepaid medical services for individuals, proposed by the fourth recommendation of this message.

Medical Education and Research

Third: Medical education and research. The federal government should undertake a broad program to strengthen professional education in medical and related fields and to encourage and support medical research. Professional education should be strengthened where necessary through federal grants-in-aid to public and to nonprofit private institutions. Medical research also should be encouraged and supported in the federal agencies and by grants-in-aid to public and nonprofit private agencies.

In my message to the Congress of Sept. 6, 1945 I made various recommendations for a general federal research program. Medical research, dealing with the broad fields of physical and mental illnesses, should be made effective in part through that general program and in part through specific provisions within the scope of a national health program. Federal aid to promote and support research in medicine, public health and allied fields is an essential part of a general research program to be administered by a central federal research agency. Federal aid for medical research and education is also an essential part of any national health program if it is to meet its responsibilities for high grade medical services and for continuing progress. Coordination of the two programs is obviously necessary to assure efficient use of federal funds. Legislation covering medical research in a national health program should provide for such coordination.

Medical Costs

Fourth: Prepayment of medical costs. Every one should have ready access to all necessary medical, hospital and related services. I recommend solving the basic problem by distributing the costs through expansion of our existing compulsory social insurance system. This is not socialized medicine. Every one who carries fire insurance knows how the law of averages is made to work so as to spread the risk and to benefit the insured who actually suffers the loss. If, instead of the costs of sickness being paid only by those who get sick, all the people—sick and well—were required to pay premiums into an insurance fund, the pool of funds thus created would enable all who do fall sick to be adequately served without overburdening any one. That is the principle on which all forms of insurance are based.

During the past fifteen years, hospital insurance plans have taught many Americans this magic of averages. Voluntary health insurance plans have been expanding during recent years; but their rate of growth does not justify the belief that they will meet more than a fraction of our people's needs. Only about 3 per cent or 4 per cent of our population now have insurance providing comprehensive medical care. A system of required prepayment would not only spread the costs of medical care, it would also prevent much serious disease. Since medical bills would be paid by the insurance fund, doctors would more often be consulted when the first signs of disease occur instead of when the disease has become serious. Modern hospital, specialist and laboratory services, as needed, would also become available to all and would improve the quality and adequacy of care. Prepayment of medical care would go a long way toward furnishing insurance against disease itself as well as against medical bills. Such a system of prepayment should cover medical, hospital, nursing and laboratory services. It should also cover dental care as fully and for as many of the population as the available professional personnel and the financial resources of the system permit.

The ability of our people to pay for adequate medical care will be increased if, while they are well, they pay regularly into a common health fund instead of paying sporadically and unevenly when they are sick. This health fund should be built up nationally in order to establish the broadest and most stable basis for spreading the costs of illness and to assure adequate financial support for doctors and hospitals everywhere. If we were to rely on state by state action only, many years would elapse before we had any general coverage. Meanwhile health

service would continue to be grossly uneven, and disease would continue to cross state boundary lines.

Medical services are personal. Therefore the nationwide system must be highly decentralized in administration. The local administrative unit must be the keystone of the system so as to provide for local services and adaptation to local needs and conditions. Locally as well as nationally, policy and administration should be guided by advisory committees in which the public and the medical professions are represented.

Subject to national standards, methods and rates of paying doctors and hospitals should be adjusted locally. All such rates for doctors should be adequate and should be appropriately adjusted upward for those who are qualified specialists. People should remain free to choose their own physicians and hospitals. The removal of financial barriers between patient and doctor would enlarge the present freedom of choice. The legal requirement on the population to contribute involves no compulsion over the doctor's freedom to decide what services his patient needs. People will remain free to obtain and pay for medical service outside the health insurance system if they desire, even though they are members of the system, just as they are free to send their children to private instead of to public schools, although they must pay taxes for public schools. Likewise physicians should remain free to accept or reject patients. They must be allowed to decide for themselves whether they wish to participate in the health insurance system full time, part time or not at all. A physician may have some patients who are in the system and some who are not. Physicians must be permitted to be represented through organizations of their own choosing and to decide whether to carry on in individual practice or to join with other doctors in group practice in hospitals or in clinics.

Our voluntary hospitals and our city, county and state general hospitals, in the same way, must be free to participate in the system to whatever extent they wish. In any case they must continue to retain their administrative independence.

Voluntary Organizations

Voluntary organizations which provide health services that meet reasonable standards of quality should be entitled to furnish services under the insurance system and to be reimbursed for them. Voluntary cooperative organizations concerned with paying doctors, hospitals or others for health services, but not providing services directly, should be entitled to participate if they can contribute to the efficiency and economy of the system.

None of this is really new. The American people are the most insurance minded people in the world. They will not be frightened off from health insurance because some people have misnamed it "socialized medicine."

I repeat—what I am recommending is not socialized medicine. Socialized medicine means that all doctors work as employees of government. The American people want no such system. No such system is here proposed. Under the plan I suggest, our people would continue to get medical and hospital services just as they do now—on the basis of their own voluntary decisions and choices. Our doctors and hospitals would continue to deal with disease with the same professional freedom as now. There would, however, be this all important difference: Whether or not patients get the services they need would not depend on how much they can afford to pay at the time.

I am in favor of the broadest possible coverage for this insurance system. I believe that all persons who work for a living and their dependents should be covered under such an insurance plan. This would include wage and salary earners, those in business for themselves, professional persons, farmers, agricultural labor, domestic employees, government employees and employees of nonprofit institutions and their families. In addition, needy persons and other groups should be covered through appropriate premiums paid for them by public agencies. Increased federal funds should also be made available by the Congress under the public assistance programs to reimburse the states for part of such premiums, as well as for direct expenditures made by the states in paying for medical services provided by doctors, hospitals and other agencies to needy persons.

Premiums for present social insurance benefits are calculated on the first \$3,000 of earnings in a year. It might be well to have all such premiums, including those for health, calculated on a somewhat higher amount, such as \$3,600. A broad program of prepayment for medical care would need total amounts approximately equal to 4 per cent of such earnings. The people of the United States have been spending, on the average, nearly this percentage of their incomes for sickness care. How much of the total fund should come from the insurance premiums and how much from general revenues is a matter for the Congress to decide. The plan which I have suggested would be sufficient to pay most doctors more than the best they have received in peacetime years. The payments of the doctors' bills would be guaranteed, and the doctors would be spared the annoyance and uncertainty of collecting fees from individual patients. The same assurance would apply to hospitals, dentists and nurses for the services they render. Federal aid in the construction of hospitals will be futile unless there is current purchasing power so that people can use these hospitals. Doctors cannot be drawn to sections which need them without some assurance that they can make a living. Only a nationwide spreading of sickness costs can supply such sections with sure and sufficient purchasing power to maintain enough physicians and hospitals. We are a rich nation and can afford many things. But ill health which can be prevented or cured is one thing we cannot afford.

Comprehensive Health Program

Fifth: Protection against loss of wages from sickness and disability. What I have discussed heretofore has been a program for improving and spreading the health services and facilities of the nation and providing an efficient and less burdensome system of paying for them. But no matter what we do, sickness will of course come to many. Sickness brings with it loss of wages. Therefore, as a fifth element of a comprehensive health program, the workers of the nation and their families should be protected against loss of earnings because of illness. A comprehensive health program must include the payment of benefits to replace at least part of the earnings that are lost during the period of sickness and long term disability. This protection can be readily and conveniently provided through expansion of our present social insurance system, with appropriate adjustment of premiums.

Insurance against loss of wages from sickness and disability deals with cash benefits rather than with services. It has to be coordinated with the other cash benefits under existing social insurance systems. Such coordination should be effected when other social security measures are reexamined. I shall bring this subject again to the attention of the Congress in a separate message on social security.

I strongly urge that the Congress give careful consideration to this program of health legislation now.

Many millions of our veterans, accustomed in the armed forces to the best of medical and hospital care, will no longer be eligible for such care as a matter of right except for their service connected disabilities. They deserve continued adequate and comprehensive health service. And their dependents deserve it too.

By preventing illness, by assuring access to needed community and personal health services, by promoting medical research and by protecting our people against the loss caused by sickness we shall strengthen our national health, our national defense and our economic productivity. We shall increase the professional and economic opportunities of our physicians, dentists and nurses. We shall increase the effectiveness of our hospitals and public health agencies. We shall bring new security to our people.

We need to do this especially at this time because of the return to civilian life of many doctors, dentists and nurses, particularly young men and women.

Appreciation of modern achievements in medicine and public health has created widespread demand that they be fully applied and universally available. By meeting that demand we shall strengthen the nation to meet future economic and social problems; and we shall make a most important contribution toward freedom from want in our land.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Nov. 19, 1945.

Army Doctors May Be Released on 70 Points by December 15

The present score for the release of doctors by the Army is 80 points, but this may be reduced to 70 points by December 15. The Navy will drop its release score for doctors from 53 to 51 points on January 1. Navy dentists are released on the same scores as Navy line officers, who since November 1 have won discharge on 46 points. Surg. Gen. Norman T. Kirk reveals that he is pressing the War Department for speedier release of doctors and dentists. He is endeavoring to learn the minimum required overseas. General Kirk's office is also considering a recommendation that the Army cut its minimum discharge score to 10 points. At present the Army releases medical officers on 80 points or if they are 48 or had entered service before Pearl Harbor. Originally the Army had 45,000 medical men, and it expects to release 17,000 doctors and dentists by January 1. The rate of release is said to be faster than that for enlisted men. The Navy reveals that it is demobilizing three doctors to every thousand men, and, with 4,700 more doctors to be eligible soon, there are expected to be "few if any" doctors besides regular Navy doctors in service.

Senator Sheridan Downey, Democrat of California, endeavoring to learn how many doctors the Army is keeping in uniform, has asked the Surgeon General three questions: 1. What was the total troop enrolment and total number of doctors as of the first of every month from January 1945 through November? 2. Will you supply a list of all hospitals in the United States under the Surgeon General's command, together with the number of patients and doctors at each? 3. What is the total number of doctors assigned to the Veterans Administration?

"Almost a Million" Medical Examinations Given by Army

Two thousand service doctors and dentists in United States separation centers gave physical examinations to 572,119 outgoing Army men and women during the first twenty-four days of October. Additional service personnel received similar examinations from other doctors and dentists at other points, boosting the total number of examinations in the period to "almost a million." The physical examinations for discharge take about an hour. There are eight medical men available for each examination, the discharges going to a dentist, an eye, ear, nose and throat specialist, an orthopedic surgeon for limb scrutiny, an internist for examination of the vital organs, a surgeon for study of scars, wounds or injuries, a laboratory man, and then a final check by an overall examiner, who may send the individual to a neuropsychiatrist for nerve tests. The Army revealed that medical school graduates are being commissioned and assigned as soon as they complete their internship. Most new medical men have been in the Army Student Training Program and are subject to immediate military assignment for the usual "duration and six months." All are assigned except those physically disqualified, the latter being reported as "relatively negligible."

Veterans Administration to Use AAF Hospital Planes

Army Air Forces hospital planes will be used by the Veterans Administration to fly patients from outlying hospitals to clinical centers. Previously patients have been moved by railroad, and long distances, particularly in Western areas, have been a serious handicap, but General Hawley, Veterans Acting Surgeon General, formerly Army chief surgeon in Europe, knows how air ambulances saved thousands of lives. Cooperation is expected from the AAF, which wants to keep a nominal number of hospital planes in operation. The agency will probably buy at least two hospital pullmans from surplus property stocks.

Further Changes in Veterans Administration

General Hawley is making an effort to use as many disabled veterans as possible in rehabilitation, prosthetics and other lines. The agency already has 123 disabled women veterans in training for its vocational rehabilitation program. The Nursing Advisory Council to the Administrator of Veterans Affairs has elected Ruth Sleeper, R.N., assistant principal of the Massachusetts General Hospital, Boston, as its chairman and has recommended to General Hawley (1) the establishment of a nurse corps in the Veterans Administration, (2) continuation of the development of in-service training, (3) postgraduate educational programs for Veterans Administration nurses and (4) appointment of a nursing advisory committee to the nurse representative in the thirteen Veteran Administration branch offices.

General Omar N. Bradley, Veterans Administrator, has announced changes in agency terminology. He has banned the use of the word "facility" to describe veterans' hospitals, in the belief that a hospital is a hospital. A domiciliary facility will be known as a Veterans Administration home. A hospital or home to which a regional office is attached will be called a Veterans Administration center instead of a "combined facility," as it has been known up to now.

Army Tuberculosis Expert Lent to Veterans Administration

To assure a superior standard of care for tuberculous veterans, Col. Esmond Ray Long of Philadelphia, described as Army's number 1 man on tuberculosis, has been lent to the Veterans Administration, on request of Major Gen. Paul R. Hawley, acting surgeon general. Colonel Long, chief consultant on tuberculosis to the Surgeon General of the Army, explains that the war did not develop any new therapies in the treatment of tuberculosis. The Army has depended on the familiar methods of "collapse therapy," including pneumothorax treatment. He said that the incidence of tuberculosis in this war is only one tenth of first world war figures. In this war it was 1.2 per thousand men annually as against 12 cases per thousand men annually in the first world war. Colonel Long only recently returned from Germany, where he was attached to the Office of Military Government.

Hospitals Get First Call on Penicillin

Because of a three month production slump, the War Production Board moved to give hospitals first call on all production. There is also opinion in favor of restoring export controls to check the amount leaving the country. An emergency directive will remain in force until production increases. Production dropped from 688,890,000 billion units in July to 568,370,000 billion units in September. It started up again in October, reaching 612,470,000 billion units. Estimated production is 657,000,000 billion units in November and 657,960,000 in December.

Army Reveals Half of Personnel Inoculated Against Influenza

About half of the U. S. Army has received inoculations against influenza and the rest will get them soon. The first recipients in this country were the staff of Walter Reed Hospital, with Major Gen. Norman T. Kirk, Army Surgeon General, and Major Gen. George F. Lull, Deputy Surgeon General, among those taking their shots. The program is expected to be completed in a few weeks. All overseas men have received their inoculation.

Shortage of Penicillin as a Result of Public Demand

Public demand for penicillin in ointment or lozenge form is blamed for a nationwide shortage of the drug reported by the Food and Drug Administration. Dr. Henry Welch, chief of the penicillin division of the Federal Drug Administration, said that the shortage will be overcome in sixty days and will not affect hospitals or private physicians.

Three Million Red Cross Volunteers to Continue War Work

Mrs. Mason Colt, new national administrator of the National Red Cross Volunteer Special Services, announces that about three fourths of the 4,000,000 wartime volunteers plan to continue Red Cross work as a permanent community service. Her estimate was given following a four day conference in the Hotel Statler with 150 delegates from thirty-nine states. She said there will be plenty of work for peacetime volunteers, as hospital nurses' aides, in health clinics, in blood banks, in tuberculosis, eye and tooth clinics and as producers of bandages and surgical dressings for local hospitals. Mrs. Colt denies that socialites dominate the Red Cross and that the organization had refused to cooperate with other welfare workers.

Inadequate Pay Keeps Doctors from the Veterans Administration

Gen. Omar N. Bradley, Veterans Administrator, reveals that the agency is 1,300 doctors short of its 2,300 goal, largely because of disparity in pay. He says that unless the service is made more attractive to doctors the situation will become worse, as 570 lent by the Army and Navy are to be discharged and returned to private practice. In addition to better pay, General Bradley advocates (1) giving veterans doctors' recognition and (2) giving them a chance to improve and practice the most modern medicine. These were improvements in practice for Veterans Administration doctors which General Hawley, acting Surgeon General, said recently would be made.

Medicine and Food Dropped in New Cargo Bomb

How medicine and food can be dropped to communities cut off by flood, forest fire and other disasters was demonstrated at Bolling Field by the Army Air Forces when six wooden, snub-nosed "cargo bombs" were dropped at heights ranging from 200 to 1,000 feet. Two were dropped in water to show their buoyancy. The contents included rations, oil, gasoline, blood plasma, serums and first aid kits, all undamaged by the impact. The demonstration was staged for the American Red Cross in cooperation with the United States Steel Corporation, which developed the container with the Air Technical Service Command.

Council on Medical Service and Public Relations

PREPAID MEDICAL CARE NEWS

Latest on Prepayment Plans

Virginia.—The Virginia Medical Service Association, approved by the Virginia State Medical Society, is governed by a board of thirty-five persons, of whom not less than two thirds must be medical men. All administrative procedures are handled by the Blue Cross (Virginia Hospital Service Association). It is a combination indemnity-service plan with income limits for the latter set at \$2,000, \$2,500 and \$3,000. A single medical-surgical contract is issued. The medical coverage is limited to in-hospital cases of three days' or more duration and pays up to thirty-five days a year. A sum not to exceed \$10 a year is paid toward diagnostic x-ray in surgical cases. The surgical-obstetric coverage is similar to that of other society sponsored plans.

Maryland.—A plan has been drawn up and passed by the Maryland legislature. The details are now in the hands of Dr. Victor F. Cullen, State Sanatorium, Md.

Oklahoma.—The Oklahoma Physicians Service, approved by the Oklahoma State Medical Association, is now in operation throughout the state. There are fifteen trustees, of whom nine are doctors. The plan offers a surgical and obstetric indemnity contract with no medical provisions or riders.

Alabama.—The Alabama State Medical Association has turned to the Hospital Service Association (Blue Cross) of Alabama for medical-surgical coverage. The state laws were amended to enable the Hospital Service Corporation to provide medical and surgical contracts for its subscribers. The con-

tracts provide an indemnity only and include inpatient medical care (\$2 a day for twenty-five days), the usual surgical procedures and a number of additional in-hospital services not found in other plan contracts.

Arizona.—The governor of Arizona signed a bill on October 3, duly passed by the state legislature, entitled "the Arizona non-profit hospital and medical service corporation law." This enabling act differs from the enabling acts of most states in that it provides that the corporation may sell either hospital or medical service contracts or both. It also provides for service contracts only, without provisions for indemnity payments.

Washington.—The Washington State Medical Bureau has been instructed to prepare a statewide contract suitable to cover such organizations as the grange, small farmer groups and business concerns which operate over a wide territory. Consideration will be given to the necessity for a broader contract, for income limitations and to the eligibility requirements for such groups. The bureau was reorganized in April of this year to coordinate the various local Medical Service Corporations operating in this state. Mr. Ralph W. Neill is the bureau manager and Dr. John F. Christensen the president.

New York.—The house of delegates of the Medical Society of the State of New York adopted a resolution on October 9 urging the organization of a national casualty company to develop voluntary medical insurance coverage in areas where none exists and to enroll nationwide employers' groups.

Tentative plans call for a stock company owned and controlled by the medical profession. The company would assist medical society-sponsored plans through national enrolment of nationwide concerns. It would provide coverage in areas where it is not available and remain only until such time as the profession could set up its own plan. Hospital coverage would be offered through Blue Cross.

The Blue Cross hospital groups are already operating a plan along this same line. However, instead of a new corporation, a central enrolment office has been organized with headquarters in New York. This office will service all eighty-seven Blue Cross Plans and merely act as agent for them.

Genesee Valley Prepayment Plan

Rochester physicians have officially approved a prepayment medical care plan to start operations on Jan. 1, 1946. The announcement was made by Mr. George P. Farrell, director of the Bureau of Medical Care Insurance of the Medical Society of New York.

The plan, Genesee Valley Medical Expense Indemnity Inc., is fully organized and awaits only the approval of the State Department of Social Welfare. It has its own trustees and will offer a limited surgical and obstetric contract until sufficient experience is gained to allow increased benefits.

Administrative service such as enrolment, billing and record keeping will be provided by the Rochester Hospital Service Association. The charge will be based on cost. All policies relating to the medical care plan will be determined by the Genesee Valley Medical Expense Indemnity Inc.

Coming Medical Meetings

American Medical Association House of Delegates, Chicago, Dec. 3-6. Dr. Olin West, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, Chicago, Dec. 10-11. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Association on Mental Deficiency, Cleveland, Nov. 28-Dec. 1. Dr. Neil A. Dayton, Box 51, Mansfield Depot, Conn., Secretary.

American Society of Anesthetists, New York, Dec. 12-13. Dr. McKinnie L. Phelps, 745 Fifth Ave., New York 22, Secretary.

International College of Surgeons, U. S. Chapter, Washington, D. C., Dec. 7-8. Dr. Louis J. Gariepy, 16401 Grand River Avenue, Detroit, Secretary.

North Pacific Pediatric Society, Portland, Ore., Dec. 1. Dr. Aldis B. Johnson, Cobb Bldg., Seattle 1, Washington, Secretary.

Oklahoma City Clinical Society, Oklahoma City, Nov. 26-29. Dr. Elmer R. Musick, 512 Medical Arts Bldg., Oklahoma City, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-16. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 4-6. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Neuropathologist for Langley Porter Clinic.—Dr. Nathan Malamud, Ann Arbor, Mich., has been appointed neuropathologist at the Langley Porter Clinic and associate clinical professor of psychiatry at the University of California Medical School, San Francisco. According to the *University of California Clip Sheet*, while an excellent neuropathologic laboratory was constructed when the clinic was built, this is the first appointment of a neuropathologist, which, it is expected, will further the plans to attack the problem of mental disease from every angle. Neuropathologic material will be received from all the state hospitals, states the *Clip Sheet*. The Langley Porter Clinic will not only be coordinated with the medical school of the university but will be the focus for these studies for the state hospital system, thus enabling the clinic to enlarge its service to the state. Dr. Malamud graduated at McGill University Faculty of Medicine, Montreal, in 1930.

New Medical School Planned.—Plans for the establishment of a new medical school in Los Angeles were under way October 29 following action of the regents of the University of California authorizing Robert G. Sproul, president, Berkeley, to seek funds from the state legislature for the purpose. Recognizing the need for additional facilities in the southern part of the state, the regents unanimously approved a recommendation to provide full training in medicine in connection with the Los Angeles campus of the university. Only one third of the doctors needed annually in southern California can be trained by the existing medical school there, according to the *University of California Clip Sheet*. University officials estimated that some sixty students would receive instruction in the new school each year, which would nearly equal the present facilities of the university on the San Francisco campus. Depending on action by the legislature, it may be from two to three years before the full curriculum can be offered in medicine, but lower division work may begin within a year, officials said.

COLORADO

Plan Medical Research Center.—Establishment of a major medical research center in Denver as a cooperative venture of the University of Colorado School of Medicine, Denver, the University of Denver and other institutions is now being considered, according to a statement to the press by Robert L. Stearns, LL.D., president of the University of Colorado. One branch would be designed to further medical science and improve public health in the area and would be operated in connection with the Colorado medical school and the Colorado General Hospital.

INDIANA

John N. Hurty Service Award.—The Indiana State Board of Health has created the John N. Hurty service award to honor the late physician who was secretary of the board from 1896 to 1922. Presented for the first time this year, the award was given to about 150 state employees who have been connected with water supplies and who have served twenty-five years or more. In this particular award Dr. Hurty is being honored for his efforts to organize the Indiana section of the American Water Works Association, which he served as president for two consecutive years.

State Medical Election.—Dr. Floyd T. Romberger, Lafayette, was chosen president-elect of the Indiana State Medical Association during its annual meeting in French Lick, November 6-8. Dr. Jesse E. Ferrell, Fortville, was installed as president. Dr. George R. Dillinger, French Lick, resigned as delegate. Dr. Alfred S. Giordano, South Bend, was elected delegate to the 1945 session of the House of Delegates of the American Medical Association and Dr. Don F. Cameron, Fort Wayne, was reelected delegate. Other delegates include Drs. Franklin S. Crockett, Lafayette, and Homer G. Hamer, Indianapolis. The 1946 meeting of the state association will be held in Fort Wayne.

MASSACHUSETTS

Lectures on Epilepsy.—Dr. William G. Lennox, Boston, opened a series of six free lectures on "Epilepsy, the Hopeful Disorder," November 15. The lectures are being given on Thursdays at the Boston Public Library under the auspices of the Lowell Institute.

Civilian Blood Program for Massachusetts.—The Massachusetts Department of Public Health will soon begin distribution of blood plasma and other blood products without cost on the same basis as serums and vaccines. The service, which is to be available to the citizens of the state, will operate as a unit of the division of biologic laboratories. The legislature has appropriated \$174,000 to equip, staff and operate a blood and blood derivatives program, and the Godfrey M. Hyams Trust of Boston has donated \$176,000 to Harvard University to construct a modern well equipped laboratory building in which processing and fractionation of blood and its products can be carried out as well as other essential procedures. The project will include collection of blood donations as donor programs are organized by civic or other groups in various communities; processing of the blood to the various fractions of known value, such as plasma, albumin, gamma globulin, fibrin foam, fibrin film, blood grouping serums and other fractions still in the process of development, as well as resuspended red cells and whole blood as soon as suitable methods for their preservation are established, and distribution of these products through recognized channels and in accordance with community contribution of blood donations.

MICHIGAN

Foundation for Medical and Health Education.—On September 19 the Michigan Foundation for Medical and Health Education, sponsored by the Michigan State Medical Society, was incorporated. Purposes of the foundation are to "acquire, provide, use, develop, endow and finance methods, means and facilities for postgraduate education in medicine, for education in medicine, for lay health education and for research, fellowships and scholarships." Officers of the foundation include Dr. Earl I. Carr, Lansing, president; Dr. Burton R. Corbus, Grand Rapids, vice president, and Herbert H. Gardner, president of the Birmingham National Bank, treasurer. William J. Burns, LL.B., Lansing, executive secretary of the state medical society, is secretary. In an effort to expedite and reach the goal of \$150,000 within a year, Dr. Arthur S. Brunk, Detroit, retiring president of the society, offered in September to contribute the sum of \$1,000 to the foundation provided ninety-nine members of the society contribute a like sum during the next twelve month period. This proposed \$100,000 would be added to the state society's contribution of \$10,000 and that of the late Dr. and Mrs. Arthur P. Biddle, about \$40,000, to make the total by September 1946 of \$150,000, the income of which would be available for immediate postgraduate needs. With the \$33,000 subscribed within a month of this offer, the foundation on October 23 had \$83,000. The Biddle bequest in 1944 was added to the \$10,000 fund of the state society, which in 1942 established a graduate education program to stimulate postgraduate work among practicing physicians (*THE JOURNAL*, Aug. 15, 1942, p. 1380; Oct. 28, 1944, p. 578). Credit goes to Dr. Corbus, Dr. Carr and Dr. James D. Bruce, Ann Arbor, for establishing the new foundation.

NEW YORK

Experimental Test of Ultraviolet Rays in Children's Diseases.—The village of Pleasantville was recently chosen for the first communitywide test in the nation of the use of ultraviolet rays to disinfect air inhaled by school children. Beginning January 1 and continuing for three years, ultraviolet lamps will be used in all classrooms of the high school and two grammar schools of Pleasantville. Tentative arrangements have been made to install similar lamps in the motion picture theater, the six churches and other buildings where children congregate. The project is sponsored by the Westchester County Health Department, of which Dr. William A. Holla is director, the Milbank Memorial Fund of New York, the University of Pennsylvania School of Medicine, Philadelphia, and the General Electric Company. According to the *Bulletin of the Medical Society of the County of Erie and the Buffalo Academy of Medicine*, the experiments will provide radiant disinfection of air, with lamps concealed so as not to cast rays directly on the children. The *Bulletin* states that for the last nine years similar experiments have been conducted

in certain schools of Pennsylvania and adjacent states. The experiments are intended to destroy germs that cause measles, mumps, chickenpox, virus pneumonia and common colds, but little effect was anticipated in checking infantile paralysis.

Urge Reconstitution of State Medical Commission.—The house of delegates of the Medical Society of the State of New York, at its recent meeting, adopted a resolution requesting the governor "to reconstitute the New York State Commission on Medical Care by the appointment of additional active practitioners of medicine." It was also voted to request the governor's commission to "provide for a continuing conference with representatives of the society" in order that a plan may eventually be developed which will accomplish the declared objectives of the governor's charge to his own commission. The state society believes that "the tentative plans developed by this commission, as revealed recently to representatives of the Medical Society of the State of New York, contain many proposals and features which, in their judgment, are impractical and would prove detrimental to sound medical progress and would effectually destroy the integrity and freedom of the medical profession." This last phrase has reference to the governor's charge to this commission, namely that it devise "a workable plan for broadening the availability of medical services and hospitals while at the same time preserving the integrity and freedom of the medical profession." The society also contends that this commission, as at present constituted, "contains an inadequate number of physicians who truly represent the general practice of medicine."

New York City

Spanish Speaking Association Plans Congress.—The International and Spanish Speaking Association of Physicians, Dentists and Pharmacists is making plans for a postwar Latin American congress, according to the secretary, Dr. Ernest F. Dupre. Dr. Jacob M. Gersberg, president, recently returned from a trip to Mexico, Central America and San Francisco during which he added seven new chapters, bringing the total of such units in the association to forty-nine.

Meeting of Society to Study Blood.—The recently formed Society for the Study of Blood met at the New York Academy of Medicine November 8 to hear the following speakers: Drs. John T. Edsall, Boston, on "The Antihemophilic Globulin of Normal Plasma," Louis K. Diamond, Boston, "The Clinical Use of an Antihemophilic Fraction of Blood Plasma," and Randolph West, New York, and Erwin Chargaff, Ph.D., New York, "Hemophilic Clotting Defect in a Female." The society was formed at a meeting June 14 (THE JOURNAL, July 21, p. 893).

Clinical Aspects of Visceral Insufficiency.—Members of the staff of Mount Sinai Hospital are offering a series of lectures on "The Clinical Aspect of Visceral Insufficiency." The series follows:

Dr. Eli Moschowitz, November 28, Intestinal Insufficiency. The Sprue Syndrome.

Dr. Ernst P. Boas, December 12, Myocardial Insufficiency.

Dr. Charles K. Friedberg, December 26, Peripheral Circulatory Insufficiency.

Dr. Arthur M. Fishberg, January 9, Renal Insufficiency.

Dr. Benjamin Eliasoph, January 23, Thyroid Insufficiency.

Dr. Coleman B. Rubin, February 6, Respiratory Insufficiency.

Dr. Vidore Snapper, February 20, Parathyroid Insufficiency and Osseous Disease.

Dr. Louis J. Soffer, March 6, Adrenal Insufficiency.

Dr. Henry Dolger, March 20, Pancreatic Insufficiency.

Dr. Solomon S. Lichtman, April 3, Hepatic Insufficiency: Metabolic Aspects.

Dr. Joseph H. Gléus, April 17, Pituitary Insufficiency.

OHIO

Training for Returned Service Physicians.—Western Reserve University School of Medicine, the Academy of Medicine of Cleveland and eighteen hospitals, comprising the Cleveland Hospital Council, will cooperate in providing special training for three different groups of doctors in need of refresher courses. The first phase of the program will be handled by individual hospitals, while additional internships and residencies will be provided within the capacities of the clinical facilities at each. The second phase of the overall program has been developed for ex-army and navy physicians who have completed two or more years of hospital training, with the medical school offering a three month refresher course covering fields of medicine, pediatrics and general surgery. Students may enroll in the refresher course on the first of any month in which there is a vacancy. The program will include a series of seminars in various topics, with free time allowed for reading and consultation with members of the staff. The third phase of the program is a "graduate fort-

night" for both former military medical officers and the civilian doctor who has been too hard pressed during the war years to keep up with latest developments. This is under a special committee of the academy of medicine.

OREGON

Changes in Health Officers.—Dr. Robert W. Ripley has resigned as health officer of Corvallis to accept a position in the Connecticut State Department of Health. Dr. William T. Edmundson, Newberg, has been appointed health officer for Hood River County, effective August 1, to succeed Dr. Cecil W. McCain, Hood River, resigned.

New Director of Industrial Hygiene.—Dr. Charles M. McGill, New Orleans, surgeon, U. S. Public Health Service, has been appointed director of the industrial hygiene division of the Oregon State board of health, effective October 1. Dr. Thomas F. Mancuso, Portland, who has been acting director, has been assigned to a similar position with the Ohio State Health Department, according to the Portland Journal, September 12.

PENNSYLVANIA

Graduate Assembly.—The Harrisburg Academy of Medicine will sponsor a postgraduate assembly November 29. The following members of the staff of Harvard Medical School, Boston, will participate: Dr. Charles A. Janeway, assistant professor of pediatrics, Dr. Lewis Dexter, instructor in medicine, and Dr. Sinclair Armstrong, instructor in medicine and research associate in physical chemistry.

Philadelphia

Schireson Injunction Against State Board Dissolved.—The injunction restraining the Pennsylvania State Board of Medical Education and Licensure from revoking the license of Henry Junius Schireson, allegedly obtained by fraud, was dissolved by Judge Karl E. Richards in the court of common pleas of Dauphin County, November 2. Through this action the court upheld the contention of attorneys for the board that a state licensing body had "the inherent right to revoke a license obtained by fraud." The court also refused to accept the plaintiff's contention that the board was guilty of laches in attempting to revoke a license which had been issued some thirty years earlier. In explaining the latter decision the court pointed out that the mere passage of time is not a criterion in determining the guilt of laches. Since the record did not disclose when the board became aware of the fraudulent aspect of the license, the court could not find any basis for holding the board guilty of laches. On June 29, 1910 Schireson was issued a license authorizing him to practice medicine and surgery in the state. Under this license he practiced in Pennsylvania from 1910 to 1913 and again from 1932 to the present time. On June 30, 1944 the state board of medical education and licensure issued a citation to Schireson requiring him to show cause why his license should not be revoked for alleged fraud, misrepresentation and deception practiced by him in procuring his license. Before the time set for hearing on the citation, Schireson filed a bill of complaint seeking to restrain the board from proceeding thereon. A preliminary injunction was granted, which by consent of the parties had been continued to the recent hearing.

VIRGINIA

Personal.—Dr. James N. Dudley, for some time health officer for the Southside Health District with headquarters at Farmville, has been appointed health officer for the city of Newport News; he was to have assumed office on October 1. He succeeds Dr. William Y. Garrett, Eastville, who resigned because of his health.—Dr. Thomas D. Walker Jr., Newport News, has been appointed city physician of Newport News to succeed Dr. Louis Loeb, retired.—Dr. Albert T. Brickhouse, health officer of Hopewell, has been appointed city coroner to fill the unexpired term of Dr. Johannes C. Bodow, resigned, it is reported. Dr. Brickhouse will serve until Dec. 31, 1947.

State Medical Election.—Dr. William L. Powell, Roanoke, was made president-elect of the Medical Society of Virginia at its meeting in Roanoke October 23. Dr. Julian L. Rawls, Norfolk, was installed as president. Other officers include Drs. James D. Hagood, Clover, William L. Peple, Richmond, and Walter C. Caudill, Pearisburg, vice presidents. Miss Agnes V. Edwards, Richmond, was reelected secretary. The society voted to hold its 1946 meeting at Virginia Beach in October. Dr. Henry B. Mulholland, Charlottesville, retiring president of the society, was named delegate to the American Medical Association.

WASHINGTON

Bubonic Plague in Tacoma.—The city of Tacoma is said to be again "free of plague infection" through a concerted program of rodent control. During the past three years the port of Tacoma has been in quarantine about twenty-one months and in this period has been quarantined and reopened twice (*THE JOURNAL*, January 6, p. 46). According to *Northwest Medicine* the statement "free of plague infection" came from the U S Public Health Service, and control of the disease is again in "the hands of Tacoma."

Personal.—Dr. Ann P. Kent, Washington, D. C., has joined the staff of the Territorial Department of Health as field physician in charge aboard the mobile health unit vessel *Hygiene*.—Dr. Edward L. Van Aelstyn, Price, Utah, has been appointed director of the Cowitz and Wahkiakum counties health departments, succeeding Dr. Thomas H. Biggs, Kelso, who resigned recently to devote his time to private practice.—Dr. Walter M. Morgan has been named health officer of Kent, succeeding Dr. George M. MacGregor, who resigned June 1.

Emily Pratt Named Head of New Hearing Section.—Dr. Emily A. Pratt, Albany, N. Y., who was appointed as otologist with the Washington State Department of Health, October 1, will be the head of the newly created Conservation of Hearing Section. Dr. Pratt, who has had years of successful experience in developing services for hard of hearing children in New York, will intensify the program now being conducted for school children in the state of Washington. This work will be carried out in cooperation with the department of public instruction and will fulfill the provisions of the law passed at the last session of the state legislature.

WEST VIRGINIA

Personal.—The following physicians were recently elected to honorary life membership in the West Virginia State Medical Association: Drs. Charles M. Hawes, Huntington, Raymond M. Sloan, Huntington, Henry E. Baum, Charleston, Wilbert G. Drinkwater, Gorman, and Jesse O. Barliff, Mullens.

Cancer Field Worker Appointed.—Miss Frances Meyer, Charleston, has been appointed cancer field worker for Kanawha County under the sponsorship of the local chapter of the Field Army of the American Cancer Society. The project, which is the first of its kind to be undertaken by the Field Army in West Virginia, will be paid for from funds raised during the 1945 cancer drive. Miss Meyer, who is experienced in the field of public welfare, will do follow-up work with needy cancer patients to make sure that they return to their doctors for follow-up examinations. She will cooperate with and aid city and county health nurses, the health department and the local department of public assistance to utilize all services available for obtaining care for needy cancer patients.

State Association Plans New Home.—Initial steps looking toward the construction of a permanent home for the West Virginia State Medical Association were taken by the council at a meeting at Parkersburg October 14. The council directed the president, Dr. Thomas L. Harris, Parkersburg, to appoint a committee to confer on the subject with a similar committee from the Kanawha Medical Society. Recognizing the need for the extension of medical care to outlying districts in the state, the council directed the president to appoint a committee on rural medical service to work with committees of the American Farm Bureau Federation and other farm organizations planning rural health improvement. Besides approving revisions by the Public Health Council of regulations concerning the control of communicable diseases, the council recommended the adoption in principle by that body, as the official communicable disease code for West Virginia, of the American Public Health Association's manual on "The Control of Communicable Diseases."

WISCONSIN

Surgical Meeting.—The Wisconsin Academy of Surgery held a joint meeting with the Jackson Clinic Post-Graduate Group at Madison October 18-20. Among the speakers were

Dr. George H. Ewell, Madison, Polycystic Kidney
Drs. R. and Arnold S. Jackson, Madison,
The Disease
Drs. H. and James A. Jackson, Madison,
The
Dr. Arthur C. Stirling, Madison, Ruptured Intervertebral Disk
Dr. Donald L. Dickerson, Draville, Ill., Penicillin and Streptomycin
in Surgery
Dr. Luther J. Holmgren, Madison, The Hernia Problem

A special lecture was given by Dr. Warren H. Cole, Chicago, on "Treatment of Surgical Lesions of the Stomach Including Preoperative and Postoperative Care."

GENERAL

New Journal on Geriatrics.—The new bimonthly medical journal *Geriatrics*, devoted to research and clinical reports on the processes and the diseases of the aged and aging, will appear in January. Modern Medicine Publications announced. The editor will be Dr. Axel E. Hedback, Minneapolis.

Luzier Grant for Work in Dermatologic Allergy.—The American College of Allergists announces a recent grant of \$1,500 to the college to be used for a research fellowship from Luzier's, Inc., Kansas City, Mo. The grant is to be known as the Luzier Grant for Fundamental Investigation in the Field of Dermatologic Allergy. The fellowship will be under the direction of Drs. Rudolf L. Baci, New York, and Stephan Epstein, Marshfield, Wis.

Cancer Society Opens Midwest Branch.—Mr. George B. Larson, formerly assistant secretary of the Wisconsin State Medical Society and for the past year associated with the Field Army of the American Cancer Society, has been named Midwest Field Army director in charge of a new midwest branch to be opened in Suite 1512 of the Marshall Field and Company Annex Building, 25 East Washington Street, Chicago. The new office will supervise the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Wisconsin, Kansas and Arkansas.

Allergy Meeting.—The American Academy of Allergy will hold its second annual meeting at the Palmer House, Chicago, December 10-11, under the presidency of Dr. Oscar Swineford Jr., Charlottesville, Va., who will discuss undergraduate education in allergy. Among the speakers will be

Drs. Harold D. Dundas, Benjamin Zohn and Robert Chobot, all of New York. Clinical Evaluation of Histamine Azopropion
Dr. Albert V. Stoesser, Minneapolis, Influence of Soy Bean Products on the Plasma Lipids and the Course of Eczema
Dr. Jehu M. Robinson, Houston, Texas, Physiology and Functional Pathology of the Lymphatic System Applied to Allergy of the Nose and Paranasal Sinuses
Dr. Frieda Brummann, Dr. Jean Crump, Dr. Lloyd D. Seeger, Dr. Ann Catherine Arthurs and Ruth E. Miller, Ph.D., all of Philadelphia. Use of Oral Penicillin in Treatment of Intrinsic Asthma

The program will also include a symposium on infectious asthma and one on antihistaminic and antianaphylactic drugs.

Advisory Health Group Meeting.—Prompt action in the development of an international health organization was urged by thirty leaders in public health and civic activities at a meeting held in the Department of State, Washington, D. C., October 11-12 on an advisory health group called by the department under the chairmanship of Dr. Thomas Parran, Surgeon General, U S Public Health Service. The group recommended that the U S government associate itself immediately with other nations in taking steps leading to the early formation of a new and broad international health organization to be closely linked with the Economic and Social Council of the United Nations. Certain general functions visualized for the organization are the collection and analysis of worldwide disease statistics as a basis for epidemic control, assistance to national health services to control disease at their sources, centralization, consolidation and subsequent distribution of health and medical knowledge and the standardization and control of drugs and other therapeutic agents.

Five Years of Rehabilitating Asthmatic Children.—The National Home for Jewish Children at Denver has for the past five years been caring for underprivileged children suffering from acute bronchial asthma and other refractory upper respiratory diseases. The home is located in Denver and is available to children from all over the country whose families cannot afford extensive and costly private care. The children remain until physicians recommend that they be returned to their homes. In a comparatively normal environment, and sharing the companionship of other children, the asthmatic child is under expert medical supervision at the home and is cared for by a staff trained in child welfare. During his stay, periodic examinations are made and full reports given to the referring physicians and hospital clinics. The National Home has a modern, well equipped infirmary where children requiring bed care are attended by registered nurses under the supervision of the attending physicians. The children are housed in attractively furnished congregate cottages with individual bedrooms. Food of the highest quality is carefully prepared by physicians. The and special diets are given when prescribed by physicians. The children participate in the community life by attending the local schools and taking part in communal recreations. In addition to the intensive preparation made prior to the child's admission to the home, an equally thorough after-care program

is carried out on the return of the child to his family. The aim of the program is to make certain that the child will continue to enjoy his restored health in the very environment which originally was a factor contributing to the child's illness. Trained social workers educate the parents to the general health practices which play an important part in the treatment of allergic diseases. Application may be made by communicating with the Social Service Department of the National Home for Jewish Children at 1457 Broadway, New York 18, or through the office of the Jewish Social Service organization in any community.

Southern Surgical Meeting.—The fifty-seventh annual meeting of the Southern Surgical Association will be held at The Homestead, Hot Springs, Va., December 4-6 under the presidency of Dr. Charles A. Vance, Lexington, Ky., whose subject will be "The Transylvania Medical Library." Among the speakers on the program will be:

Dr. William P. Longmire Jr., Sapulpa, Okla., and Major Marcus M. Ravitch, M. C., Baltimore, A New Method for Constructing an Artificial Esophagus.
Major Robert P. Kelly, M. C., Capt. Louis M. Rosati, M. C., and Capt. Robert A. Murray, M. C., White Sulphur Springs, W. Va., Treatment of Traumatic Osteomyelitis.
Col. Daniel C. Elkin, M. C., White Sulphur Springs, Cirroid Aneurysm of the Scap.
Major Boris P. Petroff, M. C., Martinsburg, W. Va., Streptomycin in Treatment of Urinary Infections.
Drs. Charles S. Venable and Walter G. Stuck, San Antonio, Texas, Muscle Implant in the Treatment of Monarticular Hypertrophic Arthritis of the Hip (Destructive Arthritis, Aseptic Necrosis and Other Conditions).
Dr. J. Albert Key, St. Louis, Bunnell's Pull Out Wire Sutures for the Fixation of Tendons, Both as Grafts and as Transplants.
Lieut. Col. Brian B. Blades, M. C., Washington, D. C., Mediastinal Tumors: A Report of Cases Treated at Army Thoracic Surgery Centers in the United States.
Dr. Guy L. Hunner, Baltimore, Is Ureteral Stricture an Etiologic Factor in the Genesis of Renal Tumor?

One feature will be a symposium on "Newer Concepts in the Treatment of the Paralyzed Patient Due to Wartime Injuries of the Spinal Cord."

Fellowships in the Medical Sciences.—Fellowships in the Medical Sciences, similar to those which have been administered by the Medical Fellowship Board of the National Research Council since 1922, will again be available for the year beginning July 1, 1946. These fellowships, supported by grants from the Rockefeller Foundation to the National Research Council, are designed to provide opportunities for training and experience in research in all branches of medical science. They are open to citizens of the United States or Canada who possess an M.D. or a Ph.D. degree and are intended for recent graduates who are not yet professionally established. In addition to these fellowships the medical fellowship board administers two groups of research fellowships, made available through a grant from the National Foundation for Infantile Paralysis, Inc. The first group, open to applicants who hold either the Ph.D. or the M.D. degree, is for the purpose of providing opportunities for special training and experience in the study of filtrable viruses. The second group, open only to graduates in medicine who have completed one or more years of hospital experience in clinical surgery and are planning a career in orthopedic surgery, is designed to provide opportunities for training and research in those basic medical sciences which will be of particular value in furthering progress in the field of orthopedic surgery. A series of fellowships in anesthesiology has been established through a grant from the American Society of Anesthesiologists. These fellowships are offered with a view to fostering a closer union between the clinical practice of anesthesiology and the fundamental disciplines on which anesthesia rests. Applicants must hold the M.D. degree and must have completed one or more years of hospital experience as intern or resident. Fellows will be appointed at a meeting of the Medical Fellowship Board late in February 1946. Applications to receive consideration at this meeting must be filed on or before January 1. Appointments may begin on any date determined by the board. For further particulars concerning these fellowships, address the Secretary of the Medical Fellowship Board, National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

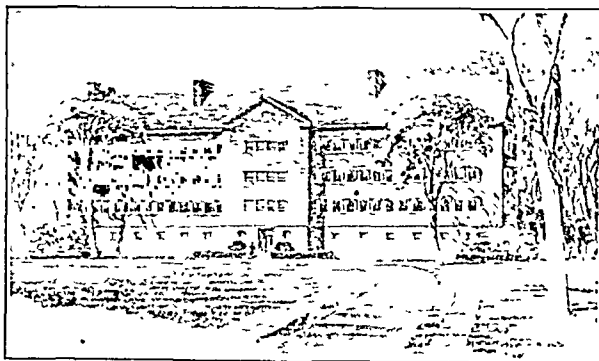
CORRECTION

Incorrect Affiliation.—Mr. Irvin R. Vaughn is director of the division of public health education and assistant director of the division of vital statistics of the South Dakota State Board of Health. THE JOURNAL, September 29, page 367, in its Organization Section, referred to Mr. Vaughn as being affiliated with the North Dakota State Health Department.

Government Services

Memorial Laboratory of Infectious Disease

Construction has started on a new infectious disease laboratory of the National Institute of Health, U. S. Public Health Service, and the Federal Security Agency. The building is located in Bethesda, Md., and will be known as the Memorial Laboratory of Infectious Diseases of the United States Public Health Service, in tribute to the laboratory workers of the service who died as a result of risks involved in their professional duties. New methods of control are to be employed. Forced ventilation, with pressure control of air intake and output, will be a major factor of protection. The correct placement of air vents and the control of air volumes and velocities are intended to insure a safe air supply. Air currents so controlled will provide escape for infectious matter in the air. Moreover, contaminated air will be purified by being drawn by fans through protective fluelike hoods. The hoods will contain electric grills that will automatically incinerate infectious particles. Automatic mechanisms which will not operate until sealed are additional safety innovations that will be used on high speed equipment. These machines will also be flooded with ultraviolet light. Workers will leave and enter the laboratories through "decontamination chambers." These chambers will be divided into three sections, a dressing room for street clothes, a shower room and another dressing room for laboratory clothes. Special mirror arrangements will be installed so that workers can thoroughly inspect themselves. The entire building will be sprayed with DDT, and



Infectious Disease Laboratory.

there are to be six separate self-contained units in two wings, which will be separated by a main hall, on which the clerical offices and library will open. These units will be dedicated to the individual study of infectious diseases. Each unit will contain a small laboratory room for chemical and serologic work and a larger room containing three small glass enclosed cubicles for the cultivation of the infectious agent. Unit laboratories will have special equipment rooms. In addition, the units will contain three animal rooms—one for large animals and the remaining two to house the small laboratory animals. Plans also call for a necropsy room, a hot and cold temperature room and a sterilization chamber. The units are to be wholly self contained and completely independent. Each will have its own dumbwaiter, which will connect directly with the incinerator. With an overall floor space of 9,626 feet, the three story building will be approximately 185 feet long and 48 feet wide. The interior is to be tile surfaced and of "flush" construction. All pipes, shelves, cabinets and lights are to be built into the walls and ceilings to facilitate cleaning and sanitation. The exterior will be finished in red brick to conform with the other six buildings located on the 97 acres of land of the U. S. Public Health Service. The original sum needed for the construction of the building was obtained by the public health service from the Public Building Administration with the approval of the Bureau of the Budget. While some of the equipment will be purchased out of annual funds of the National Institute of Health, it may be necessary, in order to equip the building completely, to secure additional funds. Present plans call for the completion of the building around May 1946. It is planned to open it for public inspection for two weeks, after which time the only visitors permitted entry will be scientists.

Foreign Letters**LONDON***(From Our Regular Correspondent)*

Oct. 20, 1945.

The Disabled Persons Register

The measures taken by the government for the benefit of the disabled are on a scale never before attempted and are most thorough. An important new feature is the register of disabled persons entitled to the advantages provided by the Disabled Persons Employment Act. Persons disabled through war service, through industrial, road or other accident or congenitally disabled are entitled to register. Disablement due to disease is recognized equally with disablement caused by wounds or injury. Thus individuals who do not qualify for war disability pensions come within the scope of the act.

There are three principal benefits: (1) courses of vocational training and industrial rehabilitation for those who need to learn a new profession, trade or occupation or who require a special course to return to work after hospital treatment for injury or sickness, (2) assistance toward ordinary employment through requiring employers to engage an indicated proportion of disabled persons and (3) employment under special or sheltered conditions for the more severely disabled, who could not obtain work in competitive employment.

Registration is voluntary and its one purpose is to obtain a list of identifiable disabled persons. When this attains any size the minister of labor will fix the quota of disabled persons whom every employer of more than thirty persons must engage. To begin with, the quota will probably be 2 per cent, and as the register grows so also will the quota. It is expected that the register will grow to a million.

German Losses in the War 7,400,000

In the House of Commons the prime minister, Mr. Atlee, stated that the estimated total losses of the German armed forces in killed, permanently wounded and permanent medical casualties were 7,400,000. This is in striking contrast to the total losses of the British commonwealth and empire forces, which amounted to 1,233,796, of whom 336,772 were killed. This total includes 330,523 prisoners of war and covers the period from Sept. 3, 1939 to May 31, 1945.

In the war of 1914-1918 the British losses were much greater. The British total losses amounted to 3,285,090, of whom 966,230 were killed. The German losses were 6,252,494, of whom 2,050,466 were killed. The greatly reduced British casualties in the second and greater war may be explained by the greater amount of fighting on the Russian front than in the previous war and the excellent arrangements for the crushing of Germany on the western front. The artificial harbor for the landing on the Normandy coast, which was prepared in secrecy, came as a complete surprise to the German high command, who, with characteristic thoroughness, did everything possible to render impregnable the places where they thought a landing might be attempted. This device alone probably saved hundreds of thousands of casualties.

**Total Prohibition of Opium in the Far East
by the British Government**

The total prohibition of opium in Malaya and all British protected countries in the Far East is announced by the British military administration in Singapore. This takes the place of the policy of Malaya before the war of gradually reducing government revenue from opium with total prohibition as the goal. The success of the new policy will depend on effective control of opium production in other countries. The British government is therefore consulting with other governments to secure cooperation.

SWITZERLAND*(From Our Regular Correspondent)*

Oct. 26, 1945.

Franco-Swiss Medical Week

A Franco-Swiss Medical Week, organized under the auspices of the Swiss Academy for Medical Sciences, has just ended. It held its meetings in the University of Geneva. With profound emotion the Swiss medical group received 120 doctors from France. This was the first official contact between medical people of France and Switzerland since the armistice of 1940. Among the French guests were Professor Roussy, rector of the University of Paris, Professor Courrier of the Institut de France, Professor Brouardel, president of the French Medical Academy, Professor Brocq, secretary of the French Surgical Academy, Professor Cornil, Professor Mondor, Professor Baudouin, dean of the Medical College of the Paris University, Professor Hermann, dean of the Medical College of the University of Lyons, and Dr. Cavaillon, general secretary of the Ministry of Public Health.

Professor Wegelin, president of the Swiss Academy of Medical Sciences, received the French guests at the official opening, where Messrs. Etter, minister for home affairs, Lachenal, Hoppenot, French ambassador in Switzerland, Professor Babel, rector of the University of Geneva, and Professor Bickel, dean of the Medical College of the same university were also present. Professor Roussy, rector of the University of Paris, and of Swiss origin, received the title of Doctor honoris causa of the University of Lausanne, together with Professor Charles Lenormand.

Tropical Institute in Basle

Thanks in part to facilities provided by the American authorities, a scientific expedition has left the Swiss Institute for Tropical Sciences in Basle for Leopoldville in the Belgian Congo, West Africa. This expedition aims to prepare for the hospitalization in Switzerland of patients suffering from tropical diseases. The mission, which includes Professor R. Geigy, director of the institute, Professor F. Rouet of the Pathologic Institute in Basle and Dr. H. Gashen of the Institute for Hygiene in Lausanne, will collect medical and entomologic data on tropical diseases, the causes and the agents through which they are transmitted and other data which will serve for research work and lectures at the Tropical Institute. The mission will remain some four months and then return to Switzerland.

Professor Mazel in Switzerland

Professor Mazel, director of the Institute of Forensic Medicine at the Medical College of Lyons, spoke at Geneva and Lausanne concerning the German occupation in the Lyons area and its medical consequences. Professor Mazel, a personal victim of the Nazis, as he was imprisoned in the Fort de Montluc, described with great dignity and perfect scientific objectivity the sufferings of Lyons and France. The practice of medicine during the occupation was difficult not only because of the lack of materials but because the occupation itself was trying particularly when health certificates had to be delivered for the exiled workers in Germany. It became even more difficult when the doctors were ordered to give to the Pétain authorities the names of people wounded by bullets; it was not in accord with professional ethics and it meant that people in the resistance movement would be arrested. Fortunately the National Council of the Order of Doctors intervened and that order was revoked.

Professor Mazel said that the only good things resulting from the occupation was the decrease of alcoholism and crime. This was due to the difficulty of obtaining alcoholic drinks and to the fact that most of the young people had gone to Germany or to the Maquis. On the other hand, criminal acts by boys

and girls, such as thefts and delicts due to disorganization of the family increased. The same applies to political criminality. Professor Mazel had been officially appointed to make an inquiry into the crimes committed by the Nazis in the Lyons area.

American Doctors in Switzerland

An officer from the headquarters of General Eisenhower is considering with Swiss authorities the possibility of students in uniform studying in Switzerland. About 150 doctors and nurses would come for one or two weeks to visit Swiss hospitals and sanatoriums. Lectures during one to two or three months would also be organized in the different medical colleges for 2,500 students.

GERMANY

The following medical news has been obtained through the Department of Commerce, Washington, D. C.—EDITOR.

Work Being Done at the University of Munich Medical School

The pharmacology department had an enrolment of 400 to 600 students per semester in normal times. The last instruction period ended about March 1, 1945, but previous damage to the buildings and equipment prevented practical work from being carried out during the winter semester. Prof. Walther Straub, former head of the department and the leading pharmacologist in Munich, died in October 1944 at the age of 70. He was succeeded by his chief assistant, Dr. A. W. Forst. Professor Straub had been interested in the use of copper sulfate for phosphorus burns and narcotine as a substitute for codeine. It was stated that all this work had been published. In addition to teaching, one of the chief functions of the department was the standardization of digitalis and strophanthin preparations. This work was originally shared by Berlin, Leipzig and Munich as the result of a government order issued in 1928. Recently, owing to the overwork of Berlin and the bombing of Leipzig, this function fell entirely to Munich. Since the occupation, Munich has also ceased to perform this duty. The methods used were the frog method (animals kept at a constant temperature) and the Knafl-Lenz method of infusion into guinea pigs, with constant observation of the electrocardiographic changes. The firms for which standardization was performed included Merck, Ysatfabrik in Wernigerode and Hageda in Berlin. A small amount of private work had also been done for the Luitpoldwerk of Munich on the toxicity of styptics, one of which was an alcohol-ether extract of lung called Clauden (also used clinically by Prof. Dr. Wilhelm Stepp). Dr. Forst's private scientific interests revolved principally around the autonomic nervous system in relation to sleep, following largely on the ideas of Hess of Zurich. Dr. Forst stated that no work of military significance had been undertaken and that no new classes of synthetics had been studied. The department has been largely wrecked, all that is left being the lecture theater (slightly damaged) and a practical chemical laboratory at present without water or gas. The equipment for the testing of digitalis and strophanthin had been evacuated to Tutzing, about 25 miles southwest of Munich.

MEDICAL CLINIC

Prof. Dr. Wilhelm Stepp, the director of the medical clinic, stated that his interests have been mainly in the field of vitamin therapy. In addition to his discussion of the vitamin B complex and his advocacy of its use as a whole, he mentioned particularly the successful use of pantothenic acid in doses of 50 to 100 mg. daily by injection or by mouth in a limited number of cases of chronic bronchitis. He also suggested the study of its use in pneumonia. His supplies of pantothenic acid came from Hoffmann-LaRoche at Grenzach. He also mentioned the use of nicotinamide in chronic gastroenteritis and colitis. In 1944 Stepp lectured in Spain and Portugal on rational vitamin

therapy. He mentioned that the incidence of polyneuritis had greatly increased in the Munich area, particularly since 1939, especially among adults. Diphtheritic polyneuritis had also increased.

Stepp expressed an active interest in the employment of citrin in hemorrhagic diathesis and hemorrhagic retinitis and mentioned favorable clinical results. He had no knowledge of any methods for the standardization of citrin. In these conditions he often used vitamins C and K in conjunction with citrin. The citrin was supplied by I. G. Farbenindustrie. The gold compound Solganal is still being used in arthritis. He maintained that the blood substitute "Periston" was giving good results and stated that no liver damage had been observed. A few persons out of a group of 18 patients who had recently been sent to the clinic from Dachau were receiving Periston. He volunteered the information that he "had had no idea of the condition of affairs at the Dachau camp but had been under the impression that prisoners were employed on cultivation of medicinal plants, under good conditions of sunlight and air." Stepp referred to a stringent shortage of the purine alkaloids in Germany. He also mentioned the new (sixth) edition of *Die Vitamine* by Stepp, Kühnau and Schroeder, published in 1944 by Enke at Stuttgart. Stepp stated that Prof. Hans Fischer had recently committed suicide.

Anatomy Department—Division of Experimental Biology. Prof. Benno Romeis was not seen, as he had been evacuated from Munich to Dissen on the Ammersee. A copy of his book *Blutgefäss- und Lymphgefässapparat innersekretorischer Drüsen*, part 3, *Innersekretorische Drüse II Hypophyse* (Berlin, Julius Springer, 1940) was examined. It was well documented and illustrated but contained no matters of interest with regard to glandular preparations. Professor Bauer, who was the only staff member present, stated that the normal complement of students in the school of anatomy was approximately 600.

DERMATOLOGY DEPARTMENT

The head of the dermatology department, Dr. Julius Mayr, was absent at Starnberger See. His deputy, Dr. Hans Otto Münsterer, stated that he had been interested in vaccinal immunity in rabbits, but this work stopped during 1941 because of a lack of food for the animals. He reported that there had been relatively little occupational disease in the area, the main ones reported being cases of dermatitis due to light metals and hydrocarbon oil. Among outpatients a great increase in the incidence of pyoderma had been encountered. This condition was treated mainly with sulfonamides, particularly sulfathiazole. The sulfonamides have been in short supply and practically unobtainable recently. There has also been a scarcity of the arsphenamines, but the supply of bismuth preparations was adequate. In the treatment of syphilis practically no cases of jaundice were encountered, and on inquiry it was found that the syringes were boiled for each case. The incidence of syphilis in the war years was said to have increased more than tenfold. Dr. Münsterer stated that he had found a considerable incidence of venereal disease among foreigners in the area, except among the Russians. Scabies had increased. The preferred treatment was with "Mitigal." Benzyl benzoate was irritant and less effective. It does not appear that the civilian population has benefited directly from any advances in military medicine. It seems that drugs in short supply were reserved for the German army.

PSYCHIATRIC CLINIC

Prof. Oswald Bumke was visited in the Psychiatry Clinic in the Nürnberg Strasse. He gave a rapid summary of the work in his department. He himself had done little or no scientific research during the war. During this period, however, he had brought out the sixth edition of his *Lehrbuch der Geisteskrankheiten*, which is basically the same as the fifth edition. In the introduction to the fifth edition it was stated that the insulin-

metrazol-electric shock treatment would be introduced. In accordance with the new law the chapter on the state and the mentally ill was radically changed. Its relations to psychoanalysis were omitted. This was written in August 1941. Professor Bumke has also written a psychologic work, *Gedanken über die Seele* (Reflections on the Psyche) Julius Springer, of which there have been several printings, but a copy of this was unobtainable. He said it was psychologic and philosophical in content. Since the autumn of 1940 he had not been able to do any research because of his numerous clinical duties. Of his assistants and colleagues he mentioned one, Bannwarth, who had to go through the formality of joining the S. S. in order to become a dozent. Bannwarth had written a monograph entitled *Ueber entzündliche Erkrankungen des Nervensystems* (Inflammatory Diseases of the Nervous System). Among the subjects treated was inoculation polyneuritis. Because of the description of nervous symptoms following some of these inoculations, publication was held up by the censor so that it might not be used for enemy propaganda. Bumke's comments were acid. This worker apparently specialized in roentgenography of the general nervous system, and encephalography. The apparatus which he used has been evacuated to Tegernsee. One of Bumke's former colleagues in the Kaiser Wilhelm Institut, Professor Beck, has completed a monograph on the cytoarchitectonics of the brain. This was published about 1941 by Springer. Professor Beck is now at Tutzing working in an observation field hospital. His interests seem mainly anatomic. Another of Bumke's assistants, Dr. Scheid, had been working on metabolism in insanity. Unfortunately this worker was shot by the S. S. about the time the Americans arrived in Tegernsee, to which he had been evacuated. Scheid had been implicated in the Bavarian freedom movement. Professor Bumke was of the opinion that biochemical studies of metabolism in insanity would be much more profitable than anatomic studies. An article, or perhaps a book, on *Psychogenische Störungen bei Kriegsteilnehmer* (Psychogenic Disturbances Among Servicemen) had been written by D. Ziehen, another of Professor Bumke's group. A copy of the manuscript had been sent to Berlin, but publication was forbidden, and Professor Bumke did not know whether there was another copy. However, Ziehen, who is at present at a hospital in Haar, may have an original typescript.

No work had been done with the electroencephalograph in Bumke's institute during the war, and apparently no new drug methods had been used, with the possible exception of the administration in schizophrenia of aminopyrine, which was scarce at the time of this visit.

State Bacteriologic Laboratory

The State Bacteriologic Laboratory, Dr. Willi Rimpau, director, in normal times performed the general bacteriologic work required by the area bounded by the Danube River, Lake Constance, Ulm and Berchtesgaden. It had four medical bacteriologists, one of them the director, some thirteen technical assistants, eight typists and nine clerks to carry on the work. The institute has been largely destroyed by bombing, however, and Dr. Rimpau is at present trying to start again on two floors of a former S. A. home, but this will require official sanction and funds. If he can get started he has about six months supply of material with which to work. He also mentioned the desirability of setting up some clinical chemical assistance for clinicians.

Bavarian Institute for Occupational Medicine

The Bavarian Institute for Occupational Medicine at Munich was completely gutted and its director, Dr. Franz Koelsch, could not be traced. The address left at the old institute was now a military headquarters.

BRAZIL

(From Our Regular Correspondent)

SÃO PAULO, Sept. 25, 1945.

Treatment of Psychopathic Patients

The Servico de Assistência a Psicopatas has undergone gratifying development during the administration of Dr. Fernando Costa in the state de São Paulo. Special attention has been given to the treatment and prevention of mental sickness. There are 8,755 patients in the hospitals of the Assistência, of whom 6,535 have entered during the administration of Dr. Fernando Costa. One of the first acts of the government was to enlarge the clinics of the Assistência, with the employment of twenty-two more doctors, some dentists and other assistants. A new hospital has been opened in Ribeirão Preto, with 400 patients and room for 1,000 beds. To attend to the patients in the rural districts Dr. Fernando Costa gave to the Assistência money to construct two outlying hospitals, one in the region served by the Central Railway and the other in the region served by the Sorocabana Railway.

Hospitals in Brazil

Hospital care in Brazil today can accommodate a large number of patients, although it has not attained complete development. In 1930 there were 607 hospitals in Brazil, which number had increased to 1,230 in 1943, located in different parts of the country. In 1930, with 42,729 beds, the number of patients cared for was 363,866. In the year 1940 653,263 patients were cared for. The number of hospital beds had increased to 109,338.

Personal

A ceremony in honor of Dr. Luis de Barros Lima, professor of surgery at the Medical School of Recife, state of Pernambuco, was held at the Santo Amaro Hospital, at which Dr. Monteiro de Moraes, a professor at the school, described the twenty-five year medical career of Dr. Barros Lima, his numerous contributions to the medical literature and the prizes and medals awarded him for distinguished medical activities.

Dr. Julio Diez, Buenos Aires surgeon and professor at the university of that city, read three papers on gastroenterology at the auditorium of the Medical Division of the Bureau of Fisheries, Department of Agriculture, in Rio de Janeiro.

The University of São Paulo has released for publication a note about Dr. Edmundo Vasconcellos, professor of surgery, who is now at the Mayo Clinic in Rochester, Minn. Dr. Vasconcellos, who is accompanied by one of his assistants, Dr. Eugenio Mauro, has been invited by the U. S. State Department to visit, during three months, the principal universities of the United States to study the modern teaching of surgery.

Marriages

MARION RUDOLPH MOBLEY JR., Florence, S. C., to Miss Elizabeth Louise Becker of Johnstown, Pa., August 25.

THOMAS WHITEHEAD MURRELL JR., Richmond, Va., to Miss Jane Nelson Goolrick of Fredericksburg, August 2.

GERALD J. NEMMERS, La Crosse, Wis., to Miss Rosemary Ehred in Forest City, Iowa, recently.

GLENN G. NEWMAN, Clinton, N. C., to First Lieut. Pearl Kaiser of Leesville, S. C., August 13.

LEO F. J. WILKING JR. to DR. VIRGINIA CENTER NICHOLS, both of New York, September 15.

JULIUS KARL NEILS, Portland, Ore., to Miss Gloria Mary Peck of St. Louis, August 10.

JOHN E. MILLER to Miss Emma Louise Schaefer, both of Quincy, Ill., in August.

HORACE H. LONG to Miss Nancy J. Nailor, both of Mechanicsburg, Pa., May 30.

LUETTE H. KUHLMAN to Mr. Jack DeVorss, both of Toledo, Ohio, in August.

Deaths

Thomas Benton Cooley * Detroit; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1895; born in Ann Arbor, Mich., June 23, 1871; professor and head of the department of pediatrics from 1936 to 1941, when he became emeritus professor at the Wayne University College of Medicine; instructor at his alma mater from 1898 to 1900 and assistant professor of hygiene from 1903 to 1905; specialist certified by the American Board of Pediatrics, Inc.; member and past president of the American Pediatric Society, serving as a member of the governing council; charter member and past president of the American Academy of Pediatrics, serving also as executive secretary to its council for pediatric research; founder president of the Detroit Pediatric Society; past president of the Detroit Academy of Medicine; member of the American Institute of Nutrition, Society for Research in Child Development and the Society for Pediatric Research; major and assistant chief of the American Red Cross Children's Bureau in France during World War I; in 1924 awarded the Cross of Legion of Honor of France; for many years chief of the pediatric service and chairman of the staff of the Children's Hospital; on the consulting staff of the Harper, Woman's and Highland Park (Mich.) hospitals; died in the Eastern Maine General Hospital, Bangor, Maine, October 13, aged 74, of hypertensive heart disease. The clinical entity erythroblastic anemia is known as Cooley's disease.

Lee S. Huizenga, Shanghai, China; New York Homeopathic Medical College and Flower Hospital, New York, 1913; medical missionary in China for the Christian Reformed Church since 1920; served as superintendent of the mission hospital at Jukao and the new tuberculosis hospital in Shanghai after establishing a leprosarium there; at one time medical adviser to the American Mission to Lepers, carrying on leprosy investigations in the orient; in 1938 a delegate both from China and the United States to the International Leprosy Conference at Cairo, Egypt; at one time a minister in a church at Englewood, N. J., and a medical missionary to the Navajo Indians in New Mexico; died in a civilian internee camp in Chapei, China, July 16, aged 64, of peritoneal carcinoma.

George W. Mackenzie * Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1893; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Laryngological, Rhinological and Otolological Society; fellow of the American College of Surgeons; past president of the Philadelphia Laryngological Society and the American Institute of Homeopathy; on the staffs of St. Luke's Hospital and the Children's Medical Center; in 1932 the University of Vienna bestowed on him a gold honor medal with a diploma of the university in recognition of his work in diseases of the eye, ear, nose and throat; died August 5, aged 73, of coronary thrombosis.

James Samuel Wolfstein, Cleveland; University of Michigan Medical School, Ann Arbor, 1922; member of the American Medical Association; member of the Academy of Medicine of Cleveland, serving as secretary and chairman of its section on obstetrics and gynecology; fellow of the American College of Surgeons; specialist certified by the American Board of Obstetrics and Gynecology; commissioned a major in the medical corps, Army of the United States, and served from September 1942 until he obtained his medical discharge in February 1944; for many years on the staff of the Mount Sinai Hospital, where he died July 27, aged 47, of carcinoma-tosis.

John Herbert Bliss * Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1921; interned at the Methodist Hospital from June 1921 to October 1923, when he became a fellow in surgery and the following year a first assistant in radium therapy at the Mayo Foundation, Rochester, Minn.; member of the Brooklyn Surgical Society; fellow of the American College of Surgeons and the International College of Surgeons; attending surgeon, Brooklyn Cancer Institute; chief surgeon, second surgical division, Methodist Hospital Clinic, and associate surgeon at the Methodist Hospital, where he died October 1, aged 52.

Carl Benjamin Rosenkrans, East Stroudsburg, Pa.; Medico-Chirurgical College of Philadelphia, 1911; member of the American Medical Association; county medical director; state game commissioner and Republican county chairman; a captain in the medical corps with the 322d Infantry, serving

overseas during World War I; one of the founders of the General Hospital of Monroe County, where he served on the staff; physician and surgeon for the Lackawanna Railroad for many years; accidentally drowned, August 23, aged 57, when he was washed overboard from a fishing boat at Indian River Inlet, Rehoboth Beach, Del.

John Minor Blackford * Seattle; University of Virginia Department of Medicine, Charlottesville, 1910; specialist certified by the American Board of Internal Medicine; member of the North Pacific Society of Internal Medicine, Association of the Resident and Ex-Resident Physicians of the Mayo Clinic and the American Gastro-Enterological Association; fellow of the American College of Physicians; served on the staff of the Mayo Clinic, Rochester, Minn., from 1911 to 1917; one of the founders of the Mason Clinic and of the Virginia Mason Hospital, of which he was chief of staff and where he died September 12, aged 58.

George James Dennis * Chicago; Miami Medical College, Cincinnati, 1887; Northwestern University Medical School, Chicago, 1898; specialist certified by the American Board of Otolaryngology; emeritus member of the Illinois State Medical Society; member of the American Academy of Ophthalmology and Otolaryngology; at one time associate in laryngology at the Northwestern University Medical School; served on the staffs of the Wesley Memorial and Grant hospitals; died in the Passavant Memorial Hospital May 21, aged 79, of duodenal ulcer, generalized arteriosclerosis and myocardial infarction.

William Kieper Kistler, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1928; member of the American Medical Association; fellow of the American College of Surgeons; specialist certified by the American Board of Otolaryngology; served on the faculties of the Graduate School of Medicine of the University of Pennsylvania and his alma mater; on the staffs of the Delaware County Hospital, Drexel Hill, and the Hahnemann, Mount Sinai and Broad Street hospitals; visiting assistant surgeon, Abington (Pa.) Memorial Hospital; died July 27, aged 46, of heat exhaustion.

Craig Barrow, Savannah, Ga.; University of Maryland School of Medicine, Baltimore, 1900; member of the American Medical Association; for many years chief surgeon of the Central of Georgia Railway and its hospital; formerly medical superintendent, vice president and president of the Georgia Infirmary; served in the medical corps of the U. S. Army during World War I; at one time alderman; served as governor and lieutenant governor of the Society of Colonial Wars in the state of Georgia; died in a local hospital August 31, aged 69, of cerebral hemorrhage.

George Hursh Ensminger, Chicago; Medico-Chirurgical College of Philadelphia, 1905; clinical instructor in otorhinolaryngology at the Loyola University School of Medicine; served as health officer of Glen Ellyn and as medical consultant for several railroad companies; junior attending ophthalmologist and rhino-otolaryngologist at the Mercy Hospital, where he had been chief of the eye clinic from 1918 to 1922; assistant to the chief aurist at the Illinois Central Hospital, where he died August 23, aged 67, of hypertensive heart disease and glomerulonephritis.

Walter Baumgarten * St. Louis; Washington University School of Medicine, St. Louis, 1896; served on the faculty of his alma mater; formerly secretary of the Missouri State Medical Association and editor of its journal; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; formerly associated with the U. S. Public Health Service; on the staffs of the Barnes, St. Luke's and Jewish hospitals; burned to death, August 23, aged 72, when his summer home near Fish Creek, Wis., caught fire.

William Douglas Anderson, Tarpon Springs, Fla.; University of Georgia Medical Department, Augusta, 1924; member of the American Medical Association; on the staff of the Morton F. Plant Hospital in Clearwater; died in Wilmington, Del., August 15, aged 51, of bleeding duodenal ulcer.

Richard Wortman Baker, Pasadena, Calif.; Beaumont Hospital Medical College, St. Louis, 1893; member of the American Medical Association; died June 7, aged 81, of arteriosclerosis.

John Joseph Bartley, Lawrence, Mass.; Harvard Medical School, Boston, 1901; member of the American Medical Association; formerly city physician; supervisor of school physicians for the city of Lawrence; died June 16, aged 73, of cerebral hemorrhage.

James William Baxter Sr. ☉ New Albany, Ind.; Kentucky School of Medicine, Louisville, 1903; past president of the Floyd County Medical Society; served in the medical corps of the U. S. Army during World War I; on the staff of St. Edward's Hospital; died August 28, aged 72, of cerebral hemorrhage and encephalitis.

Alvin Benton Caldwell, Forrest City, Ark.; Memphis (Tenn.) Hospital Medical College, 1911; member of the American Medical Association; county health officer; died in the Baptist Memorial Hospital, Memphis, Tenn., July 27, aged 66, of coronary embolism.

Georgina Helme Carruthers, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1900; member of the American Medical Association; died August 23, aged 84, of senility.

Dana Lawrence Cavendish, Fayetteville, W. Va.; Medical College of Virginia, Richmond, 1927; served during World War I; a captain in the medical corps, Army of the United States, from May to August 1942, when he was released; died August 3, aged 47, of heart disease.

Joel Toy Curry, Macon, Ga.; Columbian University Medical Department, Washington, D. C., 1897; formerly chief medical officer, retirement division, U. S. Civil Service Commission in Washington, D. C.; died in Lakemont June 30, aged 73, of coronary occlusion.

William David Davis, East Canton, Ohio; Tennessee Medical College, Knoxville, 1823; member of the American Medical Association; for many years president of the board of education; formerly on the staff of the Aultman Hospital, Canton; died August 22, aged 77, of arteriosclerosis.

Louis Alexander Denis, Red Bank, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1894; died August 2, aged 72, of coronary occlusion.

George Stephen de Renyi, Philadelphia; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1916; associate professor of anatomy at the University of Pennsylvania School of Medicine and the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; member of the American Association of Anatomists; died in the University Hospital August 24, aged 53, of cirrhosis of the liver.

John M. Fawcett, Coral Gables, Fla.; Pulte Medical College, Homeopathic, Cincinnati, 1889; died in the Ohio Valley General Hospital, Wheeling, W. Va., August 5, aged 81, of carcinoma of the gallbladder.

George Edwards Fay ☉ Detroit; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1931; at one time affiliated with the Standard Life and Accident Insurance Company; served during World War I; died in Grosse Pointe August 23, aged 70, of heart disease.

John McKelvey Foster, Birmingham, Ala.; Memphis (Tenn.) Hospital Medical College, 1910; member of the American Medical Association; physician for the juvenile court; died in the Jefferson Hospital August 9, aged 65, of coronary occlusion.

Bernard S. Gostin ☉ Macon, Ga.; College of Physicians and Surgeons, Baltimore, 1903; on the staff of the Macon Hospital; died August 28, aged 65, of coronary occlusion.

Michael Anthony Griffin ☉ Chicago; Rush Medical College, Chicago, 1896; served on the staffs of the Columbus, St. Joseph and American hospitals; died August 23, aged 75, of chronic myocarditis.

John M. Higgins, Athens, Ohio; Pulte Medical College, Homeopathic, Cincinnati, 1893; health commissioner of Athens for many years; on the staff of the Sheltering Arms Hospital; died June 30, aged 83, of heart disease.

Francis Marion Hiller, Carterville, Ill.; St. Louis College of Physicians and Surgeons, 1909; member of the American Medical Association; on the staff of the Holden Hospital, Carbondale, where he died August 31, aged 66, of coronary occlusion.

John Henry Hovenden ☉ Laurens, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; died August 28, aged 71, of coronary thrombosis.

Nathan Louis Jacobson, Lynn, Mass.; Maryland Medical College, Baltimore, 1910; member of the American Medical Association; on the staffs of the Lynn and Union hospitals; died in the Beth Israel Hospital, Boston, July 13, aged 62, of pulmonary embolism.

William Kilburn Jaques, Chicago; Chicago Medical College, 1887; died August 6, aged 86, of cerebral hemorrhage.

Thomas Gotthart Jenny ☉ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1907; died in Miami Beach, Fla., August 31, aged 59, of coronary heart disease and nephritis.

Alice Elizabeth Johnson ☉ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1905; member of the American Psychiatric Association; for many years clinical professor of psychiatry at her alma mater; formerly a druggist; at one time resident physician at the Pennsylvania Hospital, Department for Mental and Nervous Diseases; since 1920 psychiatrist at the Municipal Court; died in the Woman's Hospital July 19, aged 72, of cerebral thrombosis.

Forrest A. Kelley ☉ Winfield, Kan.; John A. Creighton Medical College, Omaha, 1906; for many years county health officer; on the staffs of the William Newton Memorial and St. Mary's hospitals; died July 14, aged 67, of coronary thrombosis.

Robert Oliver Kevin, Philadelphia; Jefferson Medical College of Philadelphia, 1882; for many years on the staff of the Jefferson Hospital; died July 30, aged 90, of acute dilatation of heart and arteriosclerosis.

George L. Lanus, Beaumont, Texas (licensed in Texas under the Act of 1907); died in St. Therese Hospital July 8, aged 78, of diabetes mellitus and acute nephritis.

Gaspar Emmanuel Leontine, Boston; College of Physicians and Surgeons, Boston, 1917; died June 10, aged 72, of coronary thrombosis.

Brooklyn Boyer Levengood, Bellwood, Pa.; Jefferson Medical College of Philadelphia, 1889; served overseas during World War I; in 1940 was presented with a fifty year testimonial certificate at a meeting of the Sixth Council District of the Medical Society of the State of Pennsylvania; on the staffs of the Mercy Hospital, Altoona, and the Nason Hospital, Roaring Springs; died July 6, aged 77, of cerebral hemorrhage.

Aaron Yancy Linville, Winston-Salem, N. C.; University of the City of New York Medical Department, New York, 1889; member of the American Medical Association; honorary member of the Medical Society of the State of North Carolina; died July 7, aged 82, of heart disease.

William Alex MacLeod ☉ New York; University of the City of New York Medical Department, 1896; died in the Yarmouth Hospital, Yarmouth, N. S., August 5, aged 76.

Joseph Elmer Magee ☉ Carnegie, Pa.; University of Pittsburgh School of Medicine, 1914; formerly Burgess of the borough of Carnegie; died August 2, aged 54, of brain tumor.

Percy Edwin Dunlop Malcolm ☉ New York; Bellevue Hospital Medical College, New York, 1893; an Affiliate Fellow of the American Medical Association; member of the American Laryngological, Rhinological and Otolological Society; fellow of the New York Academy of Medicine; specialist certified by the American Board of Otolaryngology; on the staffs of the Manhattan Eye, Ear and Throat and the Metropolitan hospitals; died in Mont Tremblant Lodge, Que., Canada, August 12, aged 75.

Benjamin Lake Noyes ☉ Stonington, Maine; Medical School of Maine, Portland, 1895; died in the Eastern Maine General Hospital, Bangor, October 16, aged 75, of pneumonia.

Charles E. O'Bryan, Mortons Gap, Ky.; University of Tennessee Medical Department, Nashville, 1899; member of the American Medical Association; died August 8, aged 77, of heart disease.

William John St. Clair O'Callaghan, Nashville, Tenn.; University of Tennessee Medical Department, Nashville, 1904; served as postmaster and postal official for many years; past president and for many years member of the board of directors of the Y. M. C. A.; died July 14, aged 77, of coronary thrombosis.

Sarah Ellen Palmer, Boston; Woman's Medical College of Pennsylvania, Philadelphia, 1880; member of the American Medical Association; fellow of the American College of Surgeons; served on the staff of the New England Hospital for Women and Children; died August 23, aged 89, of myocardial failure and paralysis agitans.

Ernst J. Panetti, Milwaukee; Milwaukee Medical College, 1901; member of the American Medical Association; died August 24, aged 79, of coronary thrombosis and arteriosclerosis.

William H. Parsons, Newcastle, Maine; University of Vermont College of Medicine, Burlington, 1885; member of the American Medical Association; honorary member of the Maine Medical Association; trustee of the Miles Memorial Hospital in Damariscotta; died June 8, aged 84, of angina pectoris.

Alice Maria Patterson, Marblehead, Mass.; Boston University School of Medicine, 1893; Tufts College Medical School, Boston, 1904; member of the American Medical Association and the New England Society of Psychiatry; served as senior physician for the Wrentham State School in Wrentham; died in Danvers June 20, aged 75, of carcinoma of the pancreas.

Paul Jacob Pauliny, Tucson, Ariz.; Deutsche Universität Medizinische Fakultät, Prague, Czechoslovakia, 1927; on the staff of the San Xavier Indian Sanatorium, where he died July 22, aged 43, of hypertension, nephritis and congestive heart disease.

Richard Kirtley Pemberton ☉ McAlester, Okla.; Missouri Medical College, St. Louis, 1895; served two terms as mayor of the city of McAlester; active member of the staffs of St. Mary's and Albert Pike hospitals; died September 24, aged 74, of coronary occlusion.

James McIlvaine Phillips, Galloway, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1898; at one time professor of pathology at the Ohio State University College of Medicine; died in the Grant Hospital, Columbus, July 28, aged 71, of shock following a prostatectomy.

Chester Arthur Poe ☉ St. Louis; St. Louis College of Physicians and Surgeons, 1914; at one time coroner of Cape Girardeau County; on the staff of the Missouri Baptist Hospital, where he died August 3, aged 58, of cerebral hemorrhage.

Philip Henry Quick, Olivet, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1895; past president of the Eaton County Medical Society; member of the American Medical Association; past president of the local school board; formerly bank president; died in Battle Creek August 11, aged 78, of cerebral hemorrhage.

Edwin V. Ross, Rochester, N. Y.; Homeopathic Hospital College, Cleveland, 1890; at one time associated with the city health department; died August 6, aged 78, of carcinoma of the face.

Edward Sturgis Rutledge, Johnstown, Ohio; Ohio Medical University, Columbus, 1897; died July 18, aged 82, of cerebral hemorrhage.

Dorsy McNeelas Ryan, Charleston, W. Va.; Medical College of Virginia, Richmond, 1906; member of the American Medical Association; served in the medical corps of the U. S. Army during World War I; died September 19, aged 67, of acute myocardial insufficiency.

Guy W. Seaton ☉ Indianapolis; Medical College of Indiana, Indianapolis, 1898; associate in otolaryngology, Indiana University School of Medicine; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Otolaryngology; died in the Methodist Hospital August 12, aged 61, of coronary occlusion.

Albert Newton Seidel, Reading, Pa.; Baltimore Medical College, 1891; died in St. Joseph Hospital June 28, aged 78, of coronary thrombosis and influenza pneumonia.

Daniel Walter Sheek, Greenwood, Ind.; Medical College of Indiana, Indianapolis, 1903; member of the board of health; served as coroner; died in St. Vincent's Hospital, Indianapolis, August 28, aged 73, of coronary occlusion.

Bradford Wyckoff Sherwood, Syracuse, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1890; died August 29, aged 86, of senility.

John Shirk Simons ☉ Marietta, Pa.; Jefferson Medical College of Philadelphia, 1923; served on the staff of St. Joseph's Hospital in Lancaster; died July 20, aged 63, of coronary occlusion.

Benjamin L. Smith, Forsyth, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1906; member of the American Medical Association; died in the Mercy Hospital, Macon, July 7, aged 62, of angina pectoris.

John Morrison Sokol ☉ Spencer, Iowa; Rush Medical College, Chicago, 1902; for many years county coroner; died July 22, aged 69, of coronary thrombosis.

Thomas Alvin Son, Bonne Terre, Mo.; American Medical College, St. Louis, 1899; for many years a member of the state board of health; died in Kirkwood July 11, aged 88, of nephritis and fracture of the left hip received in a fall.

John Murdock Stewart, Marion Center, Pa.; University of Pittsburgh School of Medicine, 1908; served during World War I; died in the Veterans Administration Facility, Aspinwall, June 29, aged 67, of coronary heart disease.

Albert Edward Snow, St. Louis; American Medical College, St. Louis, 1893; died August 13, aged 75, of arteriosclerosis.

Charles De Witt Voorhees, Clearwater, Fla.; University of the City of New York Medical Department, New York, 1889; member of the American Medical Association and the Medical Society of the State of Pennsylvania; died July 22, aged 88, of congestive heart disease.

Lucy Nye White, Freetown, Mass.; Illinois Medical College, Chicago, 1902; died June 1, aged 84, of cerebral hemorrhage.

William L. Wilson, Scipio, Ind.; Beach Medical College, Indianapolis, 1886; member of the American Medical Association; died August 28, aged 85, of carcinoma of the prostate.

Edward Archer Wight, Bolsters Mills, Maine; Medical School of Maine, Portland, 1889; died in Wakefield July 23, aged 81, of heart disease.

PUBLIC HEALTH SERVICE

Robert Olesen ☉ Medical Director, U. S. Public Health Service, Staten Island, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1905; born in New Ulm, Minn., May 22, 1883; served an eighteen month internship in Providence Hospital, Washington, D. C.; on April 1, 1908 commissioned an assistant surgeon in the regular public health service; from 1909 to 1913 served as quarantine and immigration officer in Manila, Mariveles and Iloila, serving in the last as district health officer in cooperation with the Insular Board of Health; on completion of a course at the Hygiene Laboratory, Washington, D. C., in 1913 assigned to study industrial health conditions for the U. S. Commission on Industrial Regulations in Minnesota, Michigan, Illinois and Ohio; during World War I conducted industrial surveys in New York, New Jersey, Pennsylvania, Illinois and Wisconsin for the newly created office of industrial hygiene and sanitation; served as medical director of extracantonment areas in Kentucky and Alabama; credited with organizing the bureau of communicable disease control, Wisconsin State Board of Health, in 1919 and the North Dakota State Department of Health in 1922; from 1923 to 1929, while in charge of the Office of Goiter Studies, with headquarters in Cincinnati, organized the large scale goiter surveys in various parts of the country; in 1930 assigned to the American embassy in Berlin, where he was in charge of physical and mental examinations of emigrants to the United States; returned to the United States in 1934 and assigned to the Farm Security Administration, for whose clients he developed a public health and medical program; in April 1936 assigned as assistant surgeon general in charge of the division of sanitary reports and statistics, U. S. Public Health Service; in 1939 assigned to the Foreign Quarantine Station at Rosebank; became a passed assistant surgeon in the U. S. Public Health Service in July 1912, surgeon in June 1920, senior surgeon in July 1930 and medical director in March 1934; died at his home in the quarantine station, Rosebank, August 15, aged 62, of cerebral hemorrhage.

Bruno Solby ☉ Surgeon, U. S. Public Health Service (R), Federal Security Agency, Washington, D. C., Medizinische Fakultät der Universität Wien, Vienna, Austria, 1932; member of the Society of American Bacteriologists, American Sociological Society and the Medical Society of the State of New York; associate member of the American Psychiatric Association; specialist certified by the American Board of Psychiatry and Neurology, Inc.; took postgraduate work in neuropathology, neurology and psychiatry at the New York Post-Graduate Hospital, where he had been assistant neurologist and psychiatrist; a captain in the medical corps, Army of the United States, from August 1942 to October 1943, when he was honorably discharged; joined the public health service in November 1943; detailed to the U. S. Public Health Service Dispensary, Washington, where he died September 8, aged 41, of cerebral hemorrhage.

Henry S. Wolanczyk, Assistant Surgeon, U. S. Public Health Service Reserve, Buffalo; University of Buffalo School of Medicine, 1940; diplomate of the National Board of Medical Examiners; interned at the U. S. Marine Hospital in San Francisco; joined the public health service reserve on July 1, 1941; served as public health officer for the Laclede County Health Department in Lebanon, Mo.; assigned to Coast Guard aboard the U. S. S. *Harleston* Oct. 1, 1943; died in the U. S. Marine Hospital, Portsmouth, Va., Dec. 23, 1943, aged 28.

Bureau of Investigation

SEKOV DANGEROUS TO HEALTH

Federal Court Forbids Further Interstate Sale of "Reducer"

"Home treatments" for obesity frequently contain thyroid, with all its dangerous side effects. Disastrous results from self dosing with these preparations are common. Certain such "cures" have persisted in the market for years in spite of the government's efforts to protect the public by checking their sale. The perennial "Marmola" is a conspicuous example.

Another such nostrum—"Sekov"—has thrived for at least ten years, although actions against its promoters have been initiated by two federal agencies. Sekov is the reverse spelling for "Vokes," the name of its backers, Edwin H. and Hazel R. Vokes of Hollywood, Calif., whose latest trade styles appear to be "Sekov Studios" and "Sekov Corporation." An investigation made a few years ago indicated that Hazel Vokes got her start in the weight-reducing business by working for Gertrude Nova, Inc., of Hollywood, apparently a trade style for a woman who was sometimes known variously as Gertrude Nova and Gertrude Tenderich, and who was once in a similar

WHY BE FAT?

USE SEKOV!

**A Safe Reducing Preparation
FOR MEN AND WOMEN**

Sekov, a physician's prescription registered in Washington, D. C., has been used with remarkable success for reducing overweight by persons of all ages—from 7 year old children to persons 83 years of age. No rigid diets, no exercise, no loss of time.

Send for FREE booklet today!

Advertisement of a Sekov agent

business in Denver called the Avon Laboratories (note that "Avon" is the reverse spelling of "Nova"). Apparently this person sold out her Denver concern and established a similar one in Hollywood, reportedly at the same address as that later used by the Vokes-Sekov outfit. Hazel Vokes is said to have bought the Nova business in 1935. Presumably the formula of the Nova nostrum—long alleged to contain thyroid—was included in the reported sale of her business to Hazel Vokes.

In August 1936 the Los Angeles Health Department reported that when it was investigating Sekov an agent supplied two "formulas" for it, as follows:

- | | | |
|-------|---------------------------|----------------------|
| No 1. | Thyroid 1½ gr. | |
| | Big pill whole Pit 1 gr. | |
| | Big pill whole Ovar. 3 gr | |
| | R ½ is ½ of No 1. | Digitalis ½ gr |
| No 2. | Rhubarb root 2 gr. | Cascara Sagrada 1 gr |
| | Aloni ½ gr. | Asafetida ½ gr |
| | Oleoresin ginger ½ gr | |
| | T. ½ size Digitalis ½ gr | Thyroid 2 gr |
| | P. ½ size Whole Pit. 2 gr | Thyroid 1 gr |
| | O. ½ size 2 gr. Ova whole | 1 gr whole Pit |

The presence of thyroid in these nostrums was later confirmed by chemists of the Food and Drug Administration. According to their report, each carton of the nostrum contained two types of capsules, "No 1" and "No 2." The No 1, they said, consisted of glandular material, including thyroid in amounts ranging from 1.84 to 1.95 grams per capsule, the No. 2 rhubarb root, cascara sagrada bark, aloni and asafetida, and the "Formula P" approximately 172 grams of thyroid per capsule.

The first government agency to take action against the Vokes persons was the Federal Trade Commission, which, on Sept. 26,

1940 ordered them to discontinue any of their advertisements which did not warn that the use of Sekov under the conditions prescribed in the advertising, or those customary or usual, might result in serious or even irreparable injury to health. The Commission's findings included the charge that even when Sekov might produce a reduction in weight by accelerating the rate of metabolism it might seriously weaken the body and its organs, including the heart, by means of the thyroid present. The details of this case were given in *THE JOURNAL*, Aug 9, 1941, page 472.

In March 1945 the Food and Drug Administration published the results of two actions that it had brought against the Sekov outfit following the seizure of interstate shipments of Sekov preparations. The seizures were based on the charge that the articles were misbranded under the Food, Drug and Cosmetic Act in that the labeling was false and misleading, that the nostrums would be dangerous to health when taken in the dosage or with the frequency or duration recommended on the labels, and that the latter failed to give adequate directions for use and such warnings as are necessary in the case of thyroid and laxative preparations. One product, the "Formula P," was also declared to be adulterated in that each tablet contained more than the 1 grain of thyroid represented. These findings were confirmed by a district federal court in California despite the protests of the Sekov promoters, and the charge of misbranding was sustained under Notice of Judgement No. 1002, issued in March 1945.

In this connection, Notice of Judgment No 1001 reported that, in view of the danger attending the use of the Sekov nostrums, the court issued an injunction forbidding the Vokeses thereafter to ship any of their products known as "Sekov," "Sekov Reducer," "Sekov Reducer for Men" and "Sekov Formulas P, R and T" in interstate commerce, which action means that they cannot be shipped out of California because they are potentially dangerous to health.

Thus the public outside of California is to be protected from the risk involved in taking Sekov. Whether the California officials will be willing to "harm home industry" by restricting the sale of Sekov in its own state, or simply follow the "caveat emptor" policy, remains to be seen.

SOME MISCELLANEOUS MEDICAL FRAUDS

A Variety of Schemes Debarred from the Mails

Fraud orders issued by the Post Office Department have frequently been the subject of extensive articles by the Bureau of Investigation in these pages of *THE JOURNAL*. Following is a brief abstract of one such fraud order:

Perma Company and Twil-Gro Company.—These were trade styles used by one Ollie Altman of Brooklyn in selling through the mails a product known as "Perma Youthskin" or "Perma Smoothskin." Thus, he represented, would remove wrinkles and crows' feet, benefit scrawny necks, restore the texture of the skin and the appearance and biggy eyelids, restore the texture of the skin and the appearance of the user to their former youthful condition, regardless of the age of the user. After the Post Office Department had investigated the whole business, it notified Altman to appear at a hearing in Washington and answer to a charge of using the mails to defraud. He did not appear, but sent counsel. A government chemist testified that his analysis of Perma Youthskin disclosed 35 per cent of paraffin and spermaceti, about 29 per cent of lanolin, nearly 20 per cent of water, more than 10 per cent of beeswax, 5 per cent of turtle oil, less than 1 per cent of borax, and a trace of perfume. A Senior Medical Officer of the Food and Drug Administration also testified for the government, showing that wrinkles are a natural accompaniment of age, but may result from some other causes, such as sudden and considerable loss of weight, undernourishment, improper functioning of certain endocrine glands, and exposure to the glare of the sun. He discussed the structure of the skin and its tissues, and showed the futility of attempting to correct deep wrinkles by a combination of turtle oil and lanolin, which ingredients the promoters of Perma Youthskin particularly emphasized. He testified, further, that turtle oil has no more beneficial effects on the skin than any other animal oil, and that the preparation in question would benefit the skin no more than any other grease applied to it with massage. He pointed out that the product did not supply or build up the missing tissues, though it might cause some of the fine lines in the face to be temporarily less apparent. Even the unnamed physician who testified for the defendant admitted the foregoing statements about turtle oil and agreed with the government testimony that biggy eyelids resulting from systemic diseases could be removed only by treatment and cure of such diseases. On May 4, 1944, a fraud order was issued to debar from the mails the business operating under the names Perma Company and Twil-Gro Company, and their officers and agents.

Correspondence

DEATH FROM AIR EMBOLISM FOLLOWING INSUFFLATION DURING PREGNANCY

To the Editor:—In the article by Dr. Herbert S. Breyfogle entitled "Death from Air Embolism Following Insufflation During Pregnancy" (*THE JOURNAL*, September 29, p. 342) the statement is made that "the following death from air embolism resulting from insufflation during pregnancy is therefore the fourth from this means to be reported, and the first to be recorded in the medical literature of this country."

My interest was aroused, since I had reported two deaths from air embolism due to the use of vaginal powder insufflators (one during pregnancy) in the May 1945 issue of the *American Journal of Surgery*. This was approximately four months before the publication of Breyfogle's paper. Therefore, although I hate to enter into discussion about such small issues, it seemed that there might be some question as to the accuracy of the statement quoted. This author, evidently after reading my publication in May and apparently without investigation, added the following reference to his article:

14. Since this article was submitted for publication an additional death from air embolism following insufflation during pregnancy has been reported (Martland, H. S.: Air Embolism: Fatal Air Embolism Due to Powder Insufflators Used in Gynecologic Treatments, *Am. J. Surg.* 130: 164 [May] 1945).

Investigation at the office of *THE JOURNAL* indicates that Breyfogle's article "was submitted to *THE JOURNAL* under date of Feb. 23, 1945," whereas the editor of the *American Journal of Surgery* informs me that my article was submitted Jan. 29, 1945. Therefore if we are to follow the established custom that "priority is usually calculated from the date when the article is received in the office of publication," the statement by Breyfogle that his case was "the first to be recorded in the medical literature of this country" is quite inaccurate.

However, except "to keep the record straight," priority is apparently of little significance in the report of this type of case. For it is undoubtedly true that similar catastrophes have occurred prior to the cases reported, but because of medicolegal reasons (civil suits, criminal liability and the like) have remained unreported. This is strongly supported by the experience of medical examiners in the Metropolitan Area of New York, who not infrequently investigate cases of death due to air embolism.

These deaths usually follow criminal abortions, especially by the syringe method, and wounds of and operations on the neck, upper thorax or head which involve the dural sinuses. Less frequently are encountered deaths following diagnostic and therapeutic uterine injections, transuterine pneumoperitoneum, lavage of the nasal sinuses, especially the antrum of Highmore, aerograms of the bladder, placenta previa and air injection in the region of the adrenal glands for roentgenographic visualization (Martland, H. S.: Air Embolism, with Special Reference to Its Surgical Importance, *Am. J. Surg.* 68:281 [June] 1945).

HARRISON S. MARTLAND, M.D., Newark, N. J.
Chief Medical Examiner of Essex County.

To the Editor:—Dr. Breyfogle's report of a death from air embolism following insufflation during pregnancy (*THE JOURNAL*, September 29, p. 342) interested me deeply. Contrary to Dr. Breyfogle's mention of the first reference in medical literature to insufflation into the vagina in 1936, I have to say that the dry treatment of discharge of different kinds by insufflation was used in Europe much earlier. I myself published about a hundred cases dealing with this in December 1912 in the *Therapie der Gynäcwart*, stimulated by the publica-

tion of Nassauer and Abraham some years prior. Fortunately we had not had any deaths by insufflation because we did not use this method in pregnancy, as far as I recall.

While the aforementioned authors used the Nassauer insufflator, I preferred not to do this. I noticed in beginning of my dry treatments the defects and insufficiencies of this instrument, which are (1) frequent obstruction and therefore blowing of a great amount of air into the vagina by forceful manipulation of the physician, (2) requirement of much time to bring into the vagina the intended quantity of the powder and (3) the time needed for the changing and sterilization of the nozzle of the insufflator, which is almost impossible in a big practice or a crowded clinic.

Therefore I changed my technic in 1912. I took a piece of paper, which I folded at both sides, placing the powder (2 to 3 Gm.) in the center and inserted the speculum into the vagina. I put the powder on the speculum and applied it by means of a forceps with cotton everywhere I wanted it (to the portio and vaginal walls), which procedure was accomplished by movements of the speculum. Instead of a piece of paper I now use the glass tube in which the powder is supplied. The success of this treatment and technic was excellent and I imagine also more effective than insufflation because more powder can be brought in. Besides the dangers reported by Dr. Breyfogle can be avoided through this. There is no positive air pressure as by insufflation.

The advice given by the author to abandon insufflation in cases of pregnancy and multiparas should be considered. With the explanation of my technic of dry treatment of discharge regardless of cause, I want to make it clear that this administration of the powder avoids the dangers of the insufflator, even in cases of pregnancy and multiparas.

HEDWIG PRAGER, M.D., New York.

FOOD POISONING BY SALMONELLA MONTEVIDEO

To the Editor:—In *THE JOURNAL*, September 1, an outbreak of food poisoning due to *Salmonella montevideo* in an army general hospital is reported. That outbreak possibly was not as local as the authors believe. During the night of April 16-17, 1944 there was a similar outbreak in another hospital in southern England. As the outbreak took place a few days before that hospital started to admit patients, all cases were personnel from that hospital, approximately 250 out of 400. The cases came from both hospital messes (officers' and enlisted men's). The symptoms (abdominal cramps, watery diarrhea, nausea, high fever) were the same as described in the April 11-12 outbreak. Several patients had cough and expectoration, one with definite pneumonic signs on physical examination. The hospital's x-ray equipment had not been set up yet.

Our experience with sulfaguandine (3 Gm. every four hours) was apparently satisfactory. The 30 patients (two wards) treated with that drug in adequate doses improved faster and were returned to duty within three and four days after the onset of symptoms. Others required from four to fourteen days of hospitalization, and the patient with frank pneumonia recovered in approximately four weeks under sulfadiazine therapy.

The organism in the stools that had been sent to the First Medical Laboratory was identified as *Salmonella montevideo*.

Medical officers with field units in the neighborhood told me of similar outbreaks during the same week.

Although it is possible that these outbreaks of *Salmonella montevideo* food poisoning were independent of one another and just happened during the same week, one has to consider the possibility of their having a common source rather than cook carriers.

NIELS L. LOW, Captain, M. C., A. U. S.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Graduate of Middlesex University Not Entitled to Licensure in New Jersey.—Rothseid, a "graduate of Middlesex University School of Medicine of Massachusetts," after examination was licensed to practice medicine and surgery in Massachusetts. Thereafter he served as a resident physician in the Lawrence General Hospital, Lawrence, Mass. Subsequently he applied to the state board of medical examiners of New Jersey in the alternative either for a license by reciprocity on the basis of his Massachusetts license or to be admitted to an examination for a license. The applicable sections of the New Jersey medical practice act require an applicant for a license to practice in New Jersey to have received a diploma from a professional school which in the opinion of the board "was in good standing at the time of the issuance of the diploma." Since Middlesex University, in the opinion of the board, was not in good standing either at that time or at the time of the issuance of the diploma to Rothseid, Rothseid's application was denied by the board. Rothseid then sought a writ of mandamus either to compel the board to license him by virtue of his Massachusetts license or to admit him to examination for such a license, and the matter came before the supreme court of New Jersey.

The question to be determined here, said the supreme court, is whether the board of medical examiners is justified in classifying Middlesex University School of Medicine as an institution which was not in good standing. The board bases its conclusion in the grading and standing of medical schools on the standard adopted by the "Committee of Education" (presumably the Council on Medical Education and Hospitals) of the American Medical Association and makes public the names of the schools which it approves. Rothseid argued that the action of the board in accepting the grading of medical schools by the American Medical Association "is without using its own judgment or discretion but constitutes an unlawful delegation of its duty and power." We do not agree with Rothseid's contention, continued the court. We think the board of medical examiners is entirely within its discretion to adopt the standard and grading of an organization of which it has knowledge and confidence. We think the board acted within its sound discretion within the meaning of the medical practice act and was not actuated by arbitrariness or capriciousness. Compare *Salowitz v. Michigan State Board*, 285 Mich. 214, 280 N. W. 737; *Rosenthal v. State Bar Examining Committee*, 116 Conn. 409, 165 A. 211, 87 A. L. R. 991.

The court accordingly concluded that Rothseid had not shown any violation of his rights which entitled him to a writ of mandamus and therefore denied his application for such a writ. —*Rothseid v. State Board of Medical Examiners*, 38 N. J. (2d) 444 (N. J., 1944).

Hospitals: Duty to Safeguard Delirious Patient from Self Injury.—For a number of years the plaintiff had been addicted to the excessive use of liquor and on Jan. 5, 1943 voluntarily entered a sanatorium conducted by the defendant corporation "for the cure of chronic alcoholics." She was assigned a room on the second floor of the institution. When she entered the sanatorium she was highly nervous and later at times was "delusional." She did not recognize a relative who visited her. She labored under the impression that she was in an insane asylum and was discovered scrubbing the floor of her room thinking it was her kitchen floor at home. Apparently, she was subject to restraint of no nature at the sanatorium. About two days after her admittance she was found seriously injured lying on the cement pavement below the window of her room from which she had either jumped or fallen. Subsequently she instituted suit against the defendant for damages, charging that the defendant was negligent in failing to guard and restrain her and in failing properly to bar her window to prevent her plunging through the window to the ground below. At the conclusion of the plaintiff's evidence the trial

court directed a verdict in favor of the defendant and entered judgment thereon. The plaintiff then appealed to the district court of appeal, second district, division 2, California.

The defendant sanatorium, said the appellate court, was under the obligation to use reasonable care in providing for and in guarding the safety of its patients, the obligation to use the care and take the precaution to prevent danger which a reasonable man would take under the circumstances shown to exist. The circumstances to be considered here included the patient's mental and physical condition and what she was likely to do because of that condition; but the defendant's obligation was subject to the rule that it was not required to use greater care than a reasonable person would exercise under the circumstances. The defendant was not required to take measures to avert injury to its patients which circumstances did not indicate to be reasonably necessary. Specifically, the defendant was not required to restrain its patient or bar its windows unless facts were brought to its attention showing that it was reasonably probable that the patient would do injury to herself or to some other person. In particular, in arriving at this conclusion, the court relied on the decision in *Papini v. Alexander Sanitarium, Inc.*, 12 Cal. App. (2d) 249, 55 P. (2d) 270. In that case the plaintiff sought damages resulting from the death of their son, who had been killed by a razor blade wielded by a fellow patient at the defendant hospital, one Boliva, who had been admitted as an "amnesia patient." In that case the appellate court reversed a judgment for the plaintiffs, holding that there was no evidence to show that the defendant knew that Boliva was suffering from "homicidal mania," that unless restrained he might voluntarily attack other patients, that he had attacked other persons on previous occasions or that he was a dangerous patient to be at large unrestrained. In this case the plaintiff relied on a number of cases in which awards were upheld for damages received by patients in jumping from windows or otherwise but, answered the court, in those cases facts were shown in evidence which indicated to the defendants that the patients involved were likely to inflict injury on themselves or others. No case was cited to this court in which a judgment was affirmed on proof that the patient was merely "delusional" or suffering from other mental disease, unaccompanied by acts pointing to violence. The court accordingly concluded that the evidence presented by the plaintiff in this case was insufficient to entitle her to recover judgment.

The judgment in favor of the defendant sanatorium was accordingly affirmed.—*Wood v. Samaritan Institution, Inc.*, 156 P. (2d) 470 (Calif., 1945).

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, Nov. 17, page 825.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY & SYPHILIGOLOGY: *Written*, Group B, April 22. *Oral*, Group A and B, June 6-8. Final date for filing application is March 1. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written*. Various centers. Feb. 18. Final date for filing application is December 1. Asst. Sec., Dr. W. A. Vetterl, 1 W. Maine St., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral*. Chicago, May 27. Final date for filing application is Feb. 1. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago 12.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Jan. 18-22 and Los Angeles, Jan. 28-Feb. 1. Sec., Dr. S. Judd Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF OTOLARYNGOLOGY: Spring 1946. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF PEDIATRICS: *Oral*. Atlantic City, Dec. 7-8. Sec., Dr. C. A. Aldrich, 115½ First Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: *Oral*. New, Dec. 30-22. Chicago, May 24-25. Final date for filing application is February 1946. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., N.W., Washington 6, D. C.

AMERICAN BOARD OF SURGERY: *Written*. Part I, Spring 1946. Final date for filing application is Dec. 1. Sec., Dr. J. Stewart Rodman, 225 South 15th St., Philadelphia.

AMERICAN BOARD OF UROLOGY: *Written*. Various centers, Dec. 9. *Oral*. Chicago, February 1946. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

41:243-400 (May) 1945

Studies on Tsutsugamushi Disease (Scrub Typhus, Mite Borne Typhus) in New Guinea and Adjacent Islands: Epidemiology, Clinical Observations, and Etiology in Dobadura Area. F. G. Blake, K. F. Maczey, J. F. Sadusk Jr., G. M. Kohls and E. J. Bell—p. 243
Id. Further Observations on Epidemiology and Etiology. G. M. Kohls, C. A. Armbrust, E. N. Irons and C. B. Philip—p. 374

42:1-106 (July) 1945

Development of 1943 Vaccination Study of Commission on Influenza. T. Francis Jr.—p. 1
Vaccination Against Influenza at University of Minnesota. E. R. Rickard, Minnie Thigpen and J. H. Crowley—p. 12
Value of Influenza Vaccination When Done at Beginning of Epidemic. W. M. Hale and A. P. McKee—p. 21
Vaccination Against Influenza: Study in California During Epidemic of 1943-1944. M. D. Eaton and G. Meiklejohn—p. 28
Human Immunity Following Vaccination with Formalized Influenza Virus. G. K. Hirst, N. Plummer and W. F. Friedewald—p. 45
Clinical, Epidemiologic and Immunologic Evaluation of Vaccination Against Epidemic Influenza. J. E. Salk, W. J. Menke Jr. and T. Francis Jr.—p. 57
Evaluation of Vaccination Against Influenza. T. P. Magill, N. Plummer, W. G. Smilie and J. Y. Sugg—p. 94.

American Journal of Medical Sciences, Philadelphia

210:281-420 (Sept.) 1945

Adrenalin Administration in Persistent Anxious States. D. E. Cameron—p. 281
*L eosinophilic Lung (Tropical Eosinophilia). P. I. Hodes and F. C. Wood—p. 288
Laryngeal Edema, Myocarditis and Unexpected Death (Early Acute Laryngotracheobronchitis). O. Saphir—p. 296
Life Cycle of Erythrocyte After Splenectomy and Problems of Splenic Hemolysis and Target Cell Formation. K. Singer and L. Weisz—p. 301
General Acquired Anhidrosis. H. T. Engelhardt and J. P. Melvin Jr.—p. 323
Poisoning by Hydroquinone and Mono Methyl Paraminophenol Sulfate. Report of 2 Cases with Autopsy Findings. I. Zeidman and R. Deutl—p. 328
*Xiphosternal Crunch and Its Incidence in Healthy Inductees. M. Solis Cohen—p. 333
Hereditary Familial Neurologic Disease, Resembling Charcot-Marie-Tooth Type of Progressive Muscular Atrophy, in Chinese Family. H. S. Gaskill—p. 342
Study of the Goitrogen Promizole with Reference to Thyroid, Metabolism and Blood. G. M. Higgins—p. 347
Interference Between Inactive and Active Viruses of Influenza: III. Cross-Interference Between Various Related and Unrelated Viruses. W. Henle and Gertrude Henle—p. 362
Id. IV. Nature of Interfering Agent. Gertrude Henle and W. Henle—p. 369
*Methionine in Treatment of Toxic Hepatitis. J. H. Eddy Jr.—p. 374

Eosinophilic Lung.—According to Hodes and Wood, so-called eosinophilic lung is ushered in by lassitude, loss of appetite and fever. During the second week of illness the patient usually develops a dry hacking cough, which is worse at night. The cough becomes more severe and paroxysmal, eventually interfering with sleep. Wheezing and expiratory dyspnea develop. Many patients have symptoms of asthmatic bronchitis. Some have severe paroxysms of asthma requiring epinephrine. In rare instances an explosive asthmatic attack may be the first sign of the patient's illness. After several weeks the fever subsides, weakness gradually disappears and loss of weight ceases. The bronchopulmonary symptoms usually persist and become chronic if treatment is not instituted. Physical examination reveals hyperresonance of the chest. Sibilant and sonorous ronchi usually are present with occasional

crepitant rales at the bases. The spleen is moderately enlarged in about half of the cases. The most striking feature of eosinophilic lung is the massive eosinophilia. Roentgenograms of the chest made at the end of the second week of the febrile period reveal mottling throughout both lungs. The authors report 2 cases. They find that five injections of neoarsphenamine at four day intervals are effective in treatment. Without arsenical therapy the condition tends to persist.

The Xiphosternal Crunch.—Solis-Cohen says that in about one fifth of healthy men a crunching sound may be heard over the lower part of the sternum and the ensiform cartilage, accompanying one or both sounds of the heart and occurring chiefly during systole. The intensity of this sound is slight in a little less than half the cases, moderate in a little more than one third and pronounced in slightly more than one fifth. This crunch is often transmitted to the left, occasionally being heard as far as the apex. The crunch seems to have no pathologic significance. The importance of its recognition lies in its sometimes being regarded as an organic or congenital heart murmur or as a pericardial friction rub. Because of this sound men have been denied life insurance or have been rated up, have been refused employment, have been rejected by the armed forces and have been subjected to unnecessary treatment. Although this sound has been reported on a number of occasions from 1819 to the present time, it seldom is referred to in books or articles and is recognized by few clinicians.

Methionine in Hepatitis.—In the treatment of 30 cases of acute toxic hepatitis, most of which were caused by trinitrotoluene, Eddy employed methionine without any fatalities. At least 10 of the patients were seriously ill. This is of interest in view of the published mortality in trinitrotoluene hepatitis of 30 to 35 per cent. Of the 2 patients with trinitrotoluene hepatitis seen prior to using methionine, 1 died and the second had a prolonged illness. Many of the patients since that time have appeared to be as severely poisoned as were the first 2. Among the patients with toxic hepatitis treated with methionine the length of hospitalization varied from four days to seven weeks, with an average of thirteen days. The diagnosis was based on an analysis of the occupational exposure, physical examination, icterus index, Hanger cephalin flocculation test and urinalysis for urobilinogen and bilirubin. These examinations almost always supported one another, and they gave an excellent method of follow-up. Eddy is particularly impressed with the value of a daily urinalysis for urobilinogen and bilirubin in that it has followed the course of the illness more closely than other examinations and is easily performed. Treatment consists of bed rest, a diet rich in protein and carbohydrate and poor in fat, administration of multiple vitamin products plus added vitamin B complex and the oral administration of methionine in doses of from 3 to 8 Gm daily. Several other patients with hepatitis due to carbon tetrachloride and 2 with epidemic hepatitis are thought to have been improved by methionine.

American Review of Soviet Medicine, New York

2:484-592 (Aug.) 1945

*Tissue Therapy in Cutaneous Leishmaniasis. V. P. Filatov—p. 484
Agonal States and Clinical Death: Problems in Revival of Organisms. V. A. Negovski—p. 491
Respiration and Anaerobic Glycolysis of Livers and Hepatomas in Mice Fed Orthoaminooxotoluene. N. V. Eltsin—p. 500
Adaptation to Anoxia at Different Age Levels. I. A. Arshavski—p. 508
Relation of Wound Exudate to Healing. M. P. Pokrovskaya and M. S. Makarov—p. 513
Delayed Surgical Care of Complicated Gunshot Wounds. A. I. Savitski—p. 519
*Transplantation of Cornea. O. I. Shershevskaya—p. 525
Specific Titration of Anti-Measles Serum by Complement Fixation. G. A. Orlov—p. 531.

Tissue Therapy in Cutaneous Leishmaniasis.—Filatov reports the results of tissue therapy in the form of skin grafts or aloe leaf extract on cutaneous leishmaniasis. Seven cases of cutaneous leishmaniasis are reported in which either of these two modes of tissue therapy was employed. The cases demonstrate a powerful effect: tissue therapy produces in cutaneous leishmaniasis. Grafting of conserved skin and subcutaneous injections of an extract of preserved aloe leaves are equally effective.

Transplantation of Cornea.—According to Shershevskaya, of the 435 keratoplasties performed in Filatov's clinic between 1922 and 1938 success was obtained in 24.1 per cent by the use of corneas from living donors. Filatov and his school developed the use of preserved cadaver cornea. In the Odessa clinic 264 transplantations were done, using the cornea from a cadaver. The successful results in these cases amounted to 67 per cent. Filatov perfected the technic of the operation, suggested a series of new methods, constructed instruments which made this operation simpler and easier, and widely popularized keratoplasty. Her results aroused the attention of ophthalmologists. Corneal transplantation is being performed in many hospitals throughout the Soviet Union.

American Review of Tuberculosis, New York

52:89-178 (Aug.) 1945

Tuberculosis in Household Associates: Influence of Age and Relationship. Ruth R. Puffer, H. C. Stewart and R. S. Gass.—p. 89.
Tuberculosis Among Montana Indians. J. R. McGibony and A. W. Dahlstrom.—p. 104.

*Immobilization of Both Lungs: Treatment of Pulmonary Tuberculosis in Equalizing Pressure Chamber. A. L. Barach.—p. 122.
Bronchography in Pulmonary Tuberculosis: VI. Thoracoplasty. B. A. Dornier, J. Friedlander and F. J. Wiles.—p. 145.
Anatomic Studies on Human Tuberculosis: XVIII. Additional Observations on Progressive Primary Pulmonary Tuberculosis in Adults. K. Terplan.—p. 155.

Immobilization of Both Lungs.—Barach shows that, whereas in the Thunberg type of barospirometer the patient could not entirely dispense with voluntary respiration, in his apparatus this is possible. The same alternating pressure wave of 110 mm. of mercury was produced, but a partition between the head and chest end of the chamber made possible a simultaneous arrival of an equal pressure on the two surfaces of the chest wall. The arterial oxygen saturation and the carbon dioxide content were found to be normal even in patients with advanced pulmonary tuberculosis in the absence of all voluntary respiration. The ability to dispense with the recurrent impulse to breathe required training which was achieved in 1 patient in a period of forty-five minutes and in the majority of patients in three to four hours. In 10 patients who have been treated for four months and in 5 given several courses of four months each, arrest of lung movement has been obtained in all. In 4 of these patients either little improvement took place or the benefit obtained was temporary. In the remaining 6 patients significant improvement was observed. In 1 patient collapse of a large cavity took place in four months, recurred on slight activity and was closed again in a second course with fibrous tissue scar formation. Subsequently a cavity 1 cm. in diameter was seen by x-ray at the original site. Repeated individual and concentrated sputum tests have been negative for two years. The remaining 5 patients became clinically well and were discharged as able to work. Four of them are known to be at work, free from evidence of illness, with negative sputums and either without signs of tuberculosis by x-ray or with fibrotic arrest of the disease.

Archives of Neurology and Psychiatry, Chicago

54:75-162 (Aug.) 1945

Progressive Facial Hemiatrophy. R. Wartenberg.—p. 75.
Localizing Value of Temporal Crescent Defects in Visual Fields. H. A. Shenkin and I. H. Leopold.—p. 97.

*Degeneration of Peripheral Nerves in Pernicious Anemia. D. B. Foster.—p. 102.

Emotions and Adrenergic and Cholinergic Changes in Blood. O. Diethelm, E. J. Doty and A. T. Milhorat.—p. 110.

Effects of Transient Stretching of Peripheral Nerve. D. Denny-Brown and Margaret M. Doherty.—p. 116.

Central Nervous System in Uremia: Clinicopathologic Study. J. Knutson and A. B. Baker.—p. 130.

Electroencephalogram of Dogs with Experimental Space-Occupying Intracranial Lesions. G. Ulett.—p. 141.

Peripheral Nerves in Pernicious Anemia.—Foster describes pathologic changes in the peripheral nerves in 4 cases of pernicious anemia in which necropsy was performed and the results of biopsy of a peripheral nerve in an additional case. Three cases in the present series are examples of untreated pernicious anemia of many years' duration in severe hematologic

relapse at the time of pathologic examination. In all there was evidence of degeneration of the peripheral nerves, manifested by reduction in myelin sheaths and axis cylinders, degeneration of myelin, increase in Schwann cells and endoneurial connective tissue, axonal reaction changes in the ganglion cells of the posterior root ganglions and degenerative changes in the intramedullary course of afferent posterior root fibers. The other 2 patients exemplify treated pernicious anemia, with the patients in hematologic remission at the time of death. In these 2 patients, who had received liver therapy, the changes were less severe. The author concludes that the great regenerative capacity of peripheral nerves offers an anatomic explanation for the clinically observed improvement with liver therapy in some of the neurologic manifestations of pernicious anemia.

Archives of Ophthalmology, Chicago

34:83-180 (Aug.) 1945

Lability of Ocular Tension: Test to Determine Individual Variations. S. Bloomfield and R. K. Lambert.—p. 83.

*Gonorrheal Syndrome without Gonorrhea: Reiter's Disease. R. L. Lucas and H. Weiss.—p. 97.

Local Toxic Effect of Detergents on Ocular Structures. I. H. Leopold.—p. 99.

Plastic Surgical Repair About Eyes with Free Grafts. A. Schultz and C. E. Jaecke.—p. 103.

Posterior Principal Plane of Optical System of Eye and Significance for Refraction. E. Tron.—p. 107.

Herpes Zoster Ophthalmicus: Report of Cases and Review of Literature. A. E. Edgerton.—p. 114.

Gonorrheal Syndrome without Gonorrhea.—The triad of urethritis, conjunctivitis and arthritis, occurring in this order, in the absence of a gonococcal etiology is known as Reiter's disease. The syndrome parallels gonorrheal infection so closely that suspicion of the gonococcus is difficult to dispel. In the case reported by Lucas and Weiss a crop of small vesicles developed chiefly in the central area of the cornea five days after the onset of the conjunctivitis. These broke down shortly to form discrete superficial ulcers which showed no tendency to coalesce or penetrate and healed without residual opacification within the ensuing three weeks. In this case sulfathiazole was given without a smear having been taken. Penicillin was administered repeatedly without benefit. Ultimate therapy consisted only of hot compresses and instillations of atropine. The prognosis for the eyes is good. In the reported case all symptoms had disappeared two months after hospitalization.

Bulletin of Los Angeles Neurological Society

10:1-84 (March-June) 1945

Alterations in Myelin Sheaths Adjacent to Traumatic Lesions of Brain. C. W. Rand and C. B. Courville.—p. 1.

Notes on Pathology of Cranial Tumors: I. Osteomas of Skull with Incidental Mention of Their Occurrence in Ancient Incas. K. H. Abbott and C. B. Courville.—p. 19.

Contribution to Study of Disseminated Encephalomyelitis: Report of 4 Cases Presenting Manifestations of Both Neuromyelitis Optica and Albuminocytologic Dissociation, One with Necropsy Findings. C. Marsh and S. S. DeVine.—p. 35.

Ancstry of Neuropathology: Monsieur Antoine Louis and His "Tumeurs Fongueuses de la Dure-Mère." C. R. Courville.—p. 46.

California and Western Medicine, San Francisco

63:55-106 (Aug.) 1945

Some Observations on Deficiency Disease, with Special Reference to Thiamine. J. F. Rinehart and L. D. Greenberg.—p. 63.

Lumbosacral Subarachnoid Block. C. E. Schuetz.—p. 64.

Public Health Bacteriology. J. C. Geiger.—p. 65.

Free Enterprise and the Doctor. P. A. Ferrier.—p. 67.

Role of Gallbladder in Disease of Liver. W. C. Boeck.—p. 69.

Infections of Liver, with Special Reference to Amebiasis. L. A. Aleson.—p. 73.

Portal Cirrhosis. A. M. Snell.—p. 74.

Status of Liver and Its Importance to the Surgeon. P. J. Cunnane.—p. 78.

Use of Products of Fibrinogen and Thrombin in Otolaryngology. H. P. Schenck.—p. 80.

Delaware State Medical Journal, Wilmington

17:129-146 (July) 1945

Practical Application of Rh Blood Type. J. W. Howard.—p. 129.

Skin Lesions Attending Use of Penicillin. L. B. Flinn, L. C. McGee, W. P. Featherston and D. O. Kern.—p. 133.

Periarteritis Nodosa. C. Levy.—p. 135.

Endocrinology, Springfield, Ill.

37:69-156 (Aug.) 1945

- Tissue Aldehyde Shift in Rat Kidney. K. A. Oster, with technical assistance of Jean G. Baum.—p. 69.
Effects of Sex Steroids on Gonads of Starling. J. W. Burger.—p. 77.
Distribution of Cell Types in Anterior Hypophysis During Late Pregnancy and Lactation. N. B. Everett and B. L. Baker.—p. 83.
Prostate and Seminal Vesicle Response to Testosterone Propionate in Intact and Castrate Rats. Frances H. Steadman and B. Krichesky.—p. 89.
Cholesterol and Ascorbic Acid Content of Adrenal, Liver, Brain and Plasma Following Hemorrhage. G. Sayers, M. A. Sayers, Tsan-Ying Liang and C. N. H. Long.—p. 96.
Studies on Role of Liver in Metabolism of Progesterone. G. Masson and M. M. Hoffman.—p. 111.
Vicarious Metabolic Response: Influence of Blood from Thyroxinized Animals on Oxygen Consumption of Surviving Tissue. F. N. Craig and W. T. Salter.—p. 117.
Mitosis Stimulation in Thyroid Gland Induced by Thiouracil. K. E. Paschke, A. Cantarow, A. E. Rakoff and M. S. Rothenberg.—p. 133.
Adrenal Medulla in Water Diuresis and Water Intoxication. R. Gaunt, Mildred Lilling and Margaret Cordsen.—p. 136.
Studies on Water Intoxication in Adrenalectomized Rats and Influence of Desoxycorticosterone Acetate and Epinephrine in Water Diuresis. H. W. Hays and D. R. Mathieson.—p. 147.

Georgia Medical Association Journal, Atlanta

34:127-148 (July) 1945

- Evolution of Medicine. C. Thompson.—p. 127.
Relief from Pain. W. A. Risten.—p. 132.
Glaucoma: Its Diagnosis and Management. W. O. Martin Jr.—p. 135.

34:149-172 (Aug.) 1945

- Neurosurgical Aspects of Lumbar and Sciatic Pain. E. F. Fincher.—p. 149.
Treatment of Morphine Addiction. J. C. Massee.—p. 154.

Illinois Medical Journal, Chicago

88:57-104 (Aug.) 1945

- Hospital Care for Patient with Acute Poliomyelitis. Mary S. Sherman.—p. 71.
Mental Illness as Postwar Public Health Problem. C. S. Sommer.—p. 76.
Discussion of Lacrimal Problems. H. Gifford Jr.—p. 81.
Sulfathalidine: Clinical Evaluation in Infectious Diseases of Colon. M. H. Streicher.—p. 85.
Continuous Caudal Anesthesia. P. Pernworth.—p. 87.

Journal of Clinical Endocrinology, Springfield, Ill.

5:247-290 (July-Aug.) 1945

- Pituitary Insulotropic Principle. J. W. Conn and L. Louis.—p. 247.
Observations on 78 Thyrotoxic Patients Treated with Thiouracil. T. H. McGavack, A. J. Gerl, J. H. Morton, M. Vogel and D. Schwimmer.—p. 259.
Thiouracil in Control of Thyrotoxicosis. E. M. Watson.—p. 273.
Prolonged Administration of Diethylstilbestrol. K. J. Karnaky.—p. 279.

Thyrotoxic Patients Treated with Thiouracil.—McGavack and his associates report studies on 10 male and 68 female patients with thyrotoxicosis who were under treatment with thiouracil. Of these 78 patients 53 had a diffusely hyperplastic and 25 a nodular type of goiter. Periods of treatment varied from two weeks to sixteen months. "Nervousness," apprehension, palpitation and loss of weight were the most common symptoms and were among the first to disappear. Exophthalmos was present in 38 of the 78 patients and was decreased under treatment in 17 instances. In 65 instances the thyroid was initially enlarged. Under treatment there was a transient decrease in size in 20 and a more prolonged increase in size in 21. The auricular fibrillation initially present in 18 individuals disappeared in 12 without other therapy than the thiouracil. Eight of the 78 patients were continued on the drug only sufficiently long to prepare them for surgery. The basal metabolic rate was depressed by thiouracil in both the nodular and the hyperplastic type of thyrotoxicosis. The average initial basal metabolic rate for the entire group was plus 46 per cent, with a low of plus 18 and a high of plus 87. The approximate time taken for the basal metabolic rate to reach plus 15 or below was three weeks. In every instance the blood cholesterol rose as the basal metabolic rate fell. Toxic reactions included 2 cases of agranulocytosis and 2 cases with severe febrile reactions, chills and urticarial skin lesions. The maintenance dose of thiouracil has varied from 0.1 Gm. to 0.4 Gm. daily, with an average of 0.23 Gm. daily for the 67 patients whose initial basal

metabolic rates were plus 30 or above. The treatment of 14 patients was successfully discontinued at the end of two and a half months in 5 cases, four months in 1, five months in 1, six months in 2, seven months in 2 and eight months in 3.

Journal of Immunology, Baltimore

51:1-64 (July) 1945

- Inhibition of Phagocytosis by Penicillin. H. Welch, Ruth P. Davis and C. W. Price.—p. 1.
Serologic Reactions of Two Bacterial Levans. E. J. Hehre, Dorothy S. Genghof and J. M. Neill.—p. 5.
Administration of Certain Chemotherapeutic Agents to Mice by Incorporation of Chemical in Drinking Water: Evaluation of Method. S. D. Kramer and L. D. Bunch.—p. 15.
Studies on Relative Susceptibility of Young and of Full Grown Rabbits to Intravenous Infection with Hemolytic Streptococci. P. F. DeGara.—p. 23.
Use of Commercially Available Complement Fixing Antigen for Diagnosis of Elementary Body Types of Viral Infection. A. L. Florman.—p. 29.
Reduced Acute Toxicity of Antigens in Saline in Mineral Oil Emulsion. S. P. Halbert, J. Smolens and S. Mudd.—p. 39.
Studies on Hemolytic Streptococcus: VII. Comparison of Results of Immunization Against Scarlet Fever with Toxin and Aluminum-Adsorbed Toxoid of Streptococcus Scarlatina (NY3). M. L. Menten, H. H. Finlay and Marie A. Andersch.—p. 45.
Immunologic Studies in Rheumatic Fever: I. Cutaneous Response to Type Specific Proteins of Hemolytic Streptococcus. B. Response to "Purified M" Proteins from Forty Known Types of Hemolytic Streptococcus Group A. L. M. Taran, J. M. Jablon and Helen N. Weyr.—p. 53.

Journal of Neurophysiology, Springfield, Ill.

8:221-274 (July) 1945

- Effect of Anticonvulsant Drugs on Recovery of Function Following Cerebral Cortical Lesions. C. W. Watson and Margaret A. Kennard.—p. 221.
Chemical Changes in Cerebral Cortex Associated with Convulsive Activity. W. E. Stone, J. E. Webster and E. S. Gurdjian.—p. 233.
Functional Significance of Rostral Cingular Cortex as Revealed by Its Responses to Electrical Excitation. W. K. Smith.—p. 241.
Efferent Fibers of Parietal Lobe of Cat (*Felis Domesticus*). W. G. Gobel Jr. and G. W. Liles.—p. 257.
Effects of Lowering Blood pH on Excitability of Nervous System. H. Koenig and R. A. Groat.—p. 267.

Journal of Urology, Baltimore

54:1-106 (July) 1945

- Pathologic and Anomalous Conditions Associated with Duplication of Renal Pelvis and Ureter. R. Goyanna and L. F. Greene.—p. 1.
Bilateral Crossed Renal Ectopia: Case Report. C. M. Norfleet Jr.—p. 10.
Renal Carbuncle: New Method of Treatment. T. P. Shearer, T. B. Wiper and J. M. Miller.—p. 12.
Aneurysm of Renal Artery. B. Levine.—p. 17.
Enturesis in Young Male Adults. W. E. Forsythe Jr. and S. C. Karlan.—p. 22.
Bilharziasis of Bladder (Vesical Schistosomiasis). E. A. Oekuly.—p. 39.
Postoperative Progressive Gangrene of Skin Following Suprapubic Prostatectomy. S. H. Bassow.—p. 46.
Diverticulum of Female Urethra: Review of Literature with Case Report. I. G. Downer and F. D. Virgilio.—p. 53.
Filariasis in Armed Forces. R. A. Burchans.—p. 59.
Urologic Aspects of Filariasis. W. J. McMartin.—p. 62.
AP-43: New Antispasmodic for Use in Urology. C. L. Prince and E. J. Richardson Jr.—p. 75.
Experimental and Clinical Studies with Sulfacetamide (p-Aminobenzenesulfonfylacetylilmide) Its Toxicity and Efficiency in Bacillary Infections of Urinary Tract: I. Experimental Studies. D. Lehr.—p. 87.

New Treatment of Renal Carbuncle.—Shearer and his associates report that a man aged 20 had had pain of moderate severity in the left lower chest and upper abdomen for two months. The pain was associated with temperature of a septic type. The patient stated that four days before the onset of pain he had had several boils on his face and two carbuncles in the right cervical region. Gradually, pronounced tenderness became apparent in the left costovertebral region. Intravenous pyelography revealed some compression of the calix of the left kidney, which suggested a left perirenal abscess. At surgery an abscess was not present; further studies indicated an expansile mass in the lower portion of the kidney. At a second operation the kidney was freed to the hilar structures anteriorly and posteriorly, an aspirating needle was passed into several suggestive areas and purulent material was obtained from a site deep in the substance of the kidney at the junction of the upper two thirds and lower one third. Ten cc. of thick purulent material was released and a No. 16 F. catheter was sutured

into the cavity. Bacteriologic examination of this material established the presence of a hemolytic *Staphylococcus aureus* in pure culture. One Penrose drain was placed at the upper pole of the kidney and a second at the lower, the wound was closed in layers, 200,000 units of penicillin was administered intramuscularly daily, the abscess cavity was lavaged twice daily with 5 cc. of a solution of penicillin containing 250 units per cubic centimeter and rapid sterilization was effected.

Aneurysm of Renal Artery.—Levine observed a true aneurysm of the renal artery in a woman aged 59. The laminographic method of examination as first suggested by Wilhelm was particularly helpful in establishing the diagnosis. The aneurysm was approached transperitoneally. It was felt that in dealing with a friable aneurysm it might be well first to ligate the renal vessels before mobilizing the aneurysm and the kidney. As a precautionary measure, tapes were passed under the vena cava above and below the renal vessels. The transperitoneal approach is also to be preferred if repair of the aneurysm is contemplated. The patient has been examined at regular intervals for six months after the operation. During this time she has been free from all pain and has felt well.

Nebraska State Medical Journal, Lincoln

30:265-304 (Aug.) 1945

- Types of Regressive versus Compensatory Mental Disorders. N. D. C. Lewis.—p. 268.
Education of Physicians: Now and After the War. V. Johnson.—p. 274.
American College of Surgeons' Program for Expansion of Graduate Training in Surgery. M. T. MacEachern.—p. 280.
American College of Physicians—Its Aims, Standards and Activities. E. R. Loveland.—p. 284.

30:305-340 (Sept.) 1945

- Problem of Fractured Hip. G. W. Leadbetter.—p. 309.
Thiouracil in Treatment of Hyperthyroidism: Case Reports. G. W. Covey, F. L. Rogers and H. H. Whitlock.—p. 314.
Erythroblastosis Fetalis. C. F. Moon.—p. 318.
Psychosomatic Approach in Industrial Surgery. R. Thornell Maurer.—p. 320.
Rat Control. T. A. Filipi.—p. 322.

New England Journal of Medicine, Boston

233:287-314 (Sept. 6) 1945

- Coarctation of Aorta: Experimental Studies Regarding Its Surgical Correction. R. E. Gross and C. A. Hufnagel.—p. 287.
Need of Facilities for Care of Feeble-minded Infants and Young Children. I. V. Duguid.—p. 294.
Possible Interrelation of Psoriasis and *Streptococcus fecalis*. J. H. Swartz.—p. 296.
Proctology. E. P. Hayden and T. A. Krollicki.—p. 297.
Epidural Guma of Spinal Cord.—p. 305.
Epidermoid Carcinoma (Grade III) of Bronchus, with Metastasis to Regional Lymph Nodes.—p. 307.

New York State Journal of Medicine, New York

45:1711-1806 (Aug. 15) 1945

- Treatment of Ménière's Syndrome. J. J. Rainey.—p. 1753.
Cardiac Dyspnea and Its Treatment. M. A. Donovan.—p. 1756.
Imperfections of Spinal Anesthesia. S. G. Hershey.—p. 1761.
Treatment of Acute Cholecystitis. G. W. Cottis.—p. 1765.
Radiography in Rib Fractures. R. W. Lewis.—p. 1767.
Instrument for Adult Circumcision. A. J. Philip.—p. 1768.

Northwest Medicine, Seattle

44:233-268 (Aug.) 1945

- Etiologic Factors Responsible for T Wave Changes in Electrocardiogram. F. R. Maddison.—p. 237.
Cytologic Examination of Nasal Smears: Aid in Diagnosis of Chronic Nasal Sinus Disease. A. R. Miller.—p. 242.
Mandibular Fractures at King County Hospital Treated by Roger Anderson Skeletal Fixation. J. W. Graham.—p. 250.
Ingrowing Toenail. T. L. Hyde.—p. 252.
Control of Dysentery Outbreak in Vancouver Nursery School. S. P. Lehman and Ruth Jens.—p. 255.

44:269-302 (Sept.) 1945

- Streptococcal Dissociation and Its Significance. E. E. Brown.—p. 272.
Tissue Reactions to Vitallium and Acrylic Implants. C. M. MacKenzie. D. H. Sharpless and P. Millard.—p. 277.
Plembism. T. E. P. Gocher.—p. 283.
Cerebral Intoxication Result of Trichlorethylene. N. K. Rickles.—p. 286.
Inverse Relation of Nuclear and Cytoplasmic Function. W. B. Dublin.—p. 287.
Diagnostic Pointers in Blood Diseases. E. Podolsky.—p. 288.

Ohio State Medical Journal, Columbus

41:781-880 (Sept.) 1945

- Brief Critique of Psychosomatics. C. H. Campbell.—p. 805.
Current Thinking in Nutrition. J. Forman.—p. 810.
*Treatment of Severe Acute Tonsillitis With and Without Sulfonamides. H. M. Clodfelter.—p. 819.
Neurosurgical Treatment of Gynecologic Disorders. E. W. Shannon.—p. 821.
Acute Necrotizing Angitis Due to Hypersensitivity Following Sulfonamide Therapy. R. T. Thompson.—p. 824.

Treatment of Tonsillitis.—Clodfelter reports 400 cases of streptococcal sore throat selected from more than 3,000 acute upper respiratory infections of such severity as to require hospitalization. In 41 of the 175 treated with large doses of sulfonamides the course was similar to that of the untreated cases and they were discharged on the fifth or sixth day. The secondary rise in temperature was present in 134 of the sulfonamide treated cases. The greatest number of discharges from the hospital in this group was on the tenth day and the average number of hospital days was 9.7. Sulfathiazole and sulfadiazine were used in about an equal number of cases without any appreciable difference in the two drugs. The use of sulfonamides in the treatment of severe cases of acute tonsillitis results in a prompt drop in the temperature with some relief from symptoms. But there is usually a secondary rise in temperature at the time untreated cases are being discharged. The number of hospital days is increased from 5.3 to 9.7. The patients did not feel as well on the tenth day as the untreated ones did on the fifth. It seems highly suggestive that the use of sulfonamides in the treatment of acute streptococcal tonsillitis is not only without benefit but actually detrimental to the welfare of the patient.

Puerto Rico J. Pub. Health & Trop. Med., San Juan

20:419-548 (June) 1945

- Antimalaria Measures for Protection of Military Personnel in Puerto Rico and Their Applicability to Civilian Malaria Control. J. M. Henderson.—p. 419.
*Sulfaguanidine in Treatment of Dysentery in Children. M. E. Wegman, A. Diaz Atilas, J. Basora Defillo, Elise G. Schlosser and Sophie D. Griffiths.—p. 473.
Schistosomiasis Mansonii Manifestations of Large Intestine. F. Hernández Morales.—p. 492.
Roentgenologic Changes of Small Intestine in Presence of *Schistosoma Mansonii*. F. Hernández Morales and G. Ruiz Cestero.—p. 507.
Reasons for Decline of Mortality from Puerperal Causes in Puerto Rico During Decade 1933-1943. J. S. Belaval.—p. 515.
Bacterias, Rickettsias and Pathogenic Virus Demonstrable with Electronic Microscope; Relations with Immunity and Chemotherapy; Morphology. S. Mudd and T. F. Anderson.—p. 529.

Sulfaguanidine in Dysentery.—Wegman and his associates studied the value of sulfaguanidine in young children. Immediately after admission a rectal swab culture was made and after this a culture was made of the first stool passed. Administration of sulfaguanidine was then begun with a daily dose of 0.1 Gm. per kilogram of body weight. Half of this daily dose was given on admission, followed by one fourth of the daily dose every six hours. The dosage was reduced to half the amount when diarrhea had been absent for two days and was discontinued entirely after four days without diarrhea. Forty of the children had had at least one culture positive for *Shigella*, Flexner V, W, Z or Sonne. Other varieties of *Shigella* were not encountered. Of the culturally positive cases, 23 were treated and 17 were untreated controls. The treated cases, regardless of the duration of the disease before treatment was begun, tended to terminate within a few days time, while a good proportion of the control cases lasted two weeks or more. In the 37 patients originally included in the study, but in whom cultures were never positive, there was little difference between the treated and the control cases. These observations are at variance with several reports in the literature which have indicated the value of sulfaguanidine even in the absence of positive cultures. The contrast in this study, however, adds to the evidence that sulfaguanidine must have a specific effect on *Shigella*. In the cases with positive culture, treatment with sulfaguanidine effected improvement both in terms of the duration of the diarrhea and in terms of the duration of the infection.

Rocky Mountain Medical Journal, Denver

42:561-634 (Aug.) 1945

- Meaning of Medical School. A. Gregg.—p. 577.
Vascular and Neurologic Lesions Which Result from Exposure of Extremities to Moisture and Cold. L. J. Kleinsasser.—p. 580.
Surgical Treatment of Intertrochanteric Fractures. B. N. E. Cohn and V. R. Vonburg.—p. 587.
Treatment of Impetigo Contagiosa by Allantoin Sulfathiazole in Polyvinyl Alcohol Vehicle. F. V. Worman and E. S. Stong.—p. 592.
Colorado Division of Industrial Hygiene. A. T. Rossano Jr.—p. 595.

South Carolina Medical Assn. Journal, Florence

41:187-218 (Aug.) 1945

- Toxemias of Late Pregnancy. J. D. Guess.—p. 187.
Bacillary Dysentery (Shigellosis). J. I. Waring.—p. 190.
Recent Progress in Medical Science. R. M. Pollitzer.—p. 192.
Bacteriologic and Other Studies in Public Aspects of Gonococcal Infection. H. Boatwright.—p. 196.

41:219-246 (Sept.) 1945

- Relation Between Economic and Social Trends and Practice of Medicine. C. C. Carpenter.—p. 219.
Surgical Problems in Returning Veteran. E. B. Keck.—p. 222.
Proportion of Male to Female Live Births During Wartime. G. D. Johnson.—p. 225.
Intrathoracic Goiter. F. T. Wallace.—p. 226.

Texas State Journal of Medicine, Fort Worth

41:227-280 (Sept.) 1945

- Anatomic and Mechanical Aspects of Treatment of Fractures of Forearm. W. G. Stuck.—p. 232.
Dietometabolic Urology. P. R. Stalnaker.—p. 241.
Urine Disease of Respiratory Tract. O. J. La Barge.—p. 244.
*Use of Aluminum Penicillin Mixtures in Maintenance of Blood Levels of Penicillin: I. Intramuscular Injections of Aluminum Penicillin. S. W. Bohls and E. B. M. Cook.—p. 249.
*Nebulized Penicillin in Treatment of Respiratory Infections. R. J. Hanks.—p. 253.
Use of Thiouracil in Treatment of Hyperthyroidism. E. E. Cooper.—p. 254.
Kerosene Poisoning. O. W. Lowery.—p. 259.
Venereal Disease Conference. G. P. Franks.—p. 261.
Vaginoperitoneal Fistula with Chronic Peritonitis Following Vaginal Hysterectomy. E. W. Bertner and K. C. Von Pöhle.—p. 264.

Intramuscular Injection of Aluminum Penicillin.—

Results obtained in treating patients with gonorrhea indicate that a single injection of 50,000 units or more of aluminum potassium sulfate and penicillin mixture will maintain a therapeutic level from six to nine hours. Two injections of 50,000 units at nine hour intervals would be the minimum dosage to maintain assayable levels for eighteen hours. In several cases of gonorrhea cures were obtained at low level dosage, but the number is far too few to justify conclusive statements. The practicability of the use of aluminum penicillin mixtures in decreasing both dosage of penicillin and number of injections is evident. Subsequent tests with aluminum penicillin and other therapeutic agents may reveal that syphilis as well as gonorrhea may be treated by general practicing physicians without hospitalizing the patient in rapid treatment centers.

Nebulized Penicillin in Respiratory Infections.—Results with nebulized penicillin have been so much superior to those with sulfonamides that there is no need to use the latter with the attendant danger of sensitization and possible death. Thus far no complications have been experienced with penicillin. A saline solution containing 500 units per cubic centimeter seems to give the best results. An oxygen tank with a flow meter and humidifier is connected by a rubber tube to a DeVilbiss Nebulizer No. 40. Two cc. of penicillin solution is placed in the glass nebulizer, and an oxygen flow of 4 liters is set. The patient is instructed to hold the nebulizer between the teeth and breathe through the mouth. The treatment usually takes twenty minutes and is given once a day. In acute tonsillitis, laryngitis and bronchitis the results are startling. One, two or three treatments gives complete relief from fever and other symptoms. The subacute type of infection, such as the streptococcal pneumonia, will respond to six to twelve treatments given once a day. The chronic infection will require twenty to sixty treatments once daily. In cases of chronic infection the sputum will be reduced, the temperature will return to normal or nearly so, the toxic symptoms will diminish and a feeling of well being will be reestablished. Virus pneumonia will also respond to this method of treatment even where parenteral injection of penicillin has failed.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2:205-242 (Aug. 18) 1945

- *Trial of Whooping Cough Vaccine in City and Residential Nursery Groups: Report to Medical Research Council. A. M. McFarlan, Elizabeth Topley and Mary Fisher.—p. 205.
Problems of Naval Warfare Under Climatic Extremes. M. Critchley.—p. 208.
Preservation of Human Spermatozoa at Low Temperatures. A. S. Parkes.—p. 212.
Hemolytic Streptococcal Throat Infections: Their Complications and Sequels, with Special Reference to Penicillin Treatment. P. Robinson.—p. 213.
Two Unusual Stress Fractures. I. D. Kitchin and D. A. Richmond.—p. 214.
Tuberculin Testing in Children: Comparison of Methods. D. Bell and Ursula Jerram.—p. 215.
Postoperative Vomiting in Relation to Anesthetic Time. J. M. Smith.—p. 217.

2:243-272 (Aug. 25) 1945

- Sequelae of Cerebrospinal Meningitis. Follow-Up Study of 986 Cases. J. A. Degen, with assistance of Helen Cameron, Virginia L. M. Robinson and Mildred S. R. Wieden.—p. 243.
Review of Psychologic Work at Brain Injuries Unit, Edinburgh, 1941-1945. O. L. Zangwill.—p. 248.
Accidental Infant Suffocation. W. H. Davison.—p. 251.
*Polyneuritis After Jungle Sores: Series of 21 Cases. R. L. Ward and A. S. Mason.—p. 252.
Acute Infective Polyneuritis. C. P. Petch.—p. 254.
Premedical Zoology. M. Abercrombie and M. L. Johnson.—p. 262.

Whooping Cough Vaccine in Nursery Groups.—McFarlan and his associates assessed the prophylactic value of pertussis vaccine by comparing inoculated children and control children. Over 600 susceptible children of 6 months to 3 years of age attending welfare clinics and wartime day nurseries in Oxford City, and 110 evacuee children of 6 months to 3 or 4 years of age distributed in eight residential nurseries in Oxfordshire, Berkshire and Buckinghamshire were divided into "inoculated" and "control" groups by methods designed to render the two groups similar in every respect other than inoculation. The inoculated children were given either two doses of pertussis vaccine at a four weeks interval or four doses at intervals of one, one and four weeks. The total dosage ranged from 40,000 to 100,000 million organisms, corresponding to an American dosage of about 120,000 to 300,000 millions. Whooping cough occurred sporadically in Oxford City during the succeeding eighteen months and broke out in four of the residential nurseries two weeks to nine months after the last inoculation. Significant differences were not observed in the incidence or severity of whooping cough between the inoculated and the control children. In Oxford City 12.5 per cent of 327 inoculated and 14.1 per cent of 305 control children developed definite whooping cough. In the residential nurseries the corresponding figures were 55 per cent of 33 inoculated and 63 per cent of 30 control children. The evidence obtained from this investigation lends no support to the view that pertussis vaccine is of value in the prophylaxis of whooping cough; and it is suggested that the use of this vaccine should be discontinued till some positive evidence of its value is obtained.

Polyneuritis After Jungle Sores.—Ward and Mason say that in a recent campaign in the Burmese jungle many of the British and Indian troops developed multiple indolent ulcers, commonly known as "jungle sores." Some of those who had suffered from jungle sores contracted a peripheral neuritis later. Of 21 patients 11 were admitted complaining of symptoms referable to their neuritis, 9 because of malarial relapse and 1 with jungle sores. All had suffered from jungle sores but, except for patient 19, the ulcers were healed at the time of admission. Sixteen patients reported blurring of vision as the first symptom of nervous involvement. The average duration of blurred vision was four weeks. All patients noted disturbance of sensation. In 4 cases it synchronized with blurring of vision, but in the remainder it occurred three weeks later. Sensory symptoms consisting of tingling, numbness and coldness of the extremities were often severe enough to make the men report sick. In the milder cases these paresthesias were the only complaints; however, others later complained of difficulty

in walking and writing. The picture in its most severe form was completed by progressive weakness of the limbs, spreading to involve hips and shoulders. In addition anesthesia of the extremities, astereognosis and ataxia were present. From a shuffling walk with feet apart the gait deteriorated until walking was impossible. Examination of the nervous system in these cases showed the characteristic signs of a polyneuritis. Eleven of the cases were mild. In 7 moderately severe cases the disability was sufficient to impede the patient's everyday life. Only 3 patients became bedridden. The polyneuritis was not influenced by the vitamin B complex. Moreover, the nutrition of all patients was good. The author suggests that a toxin, elaborated by bacteria infecting the ulcers, was the responsible agent. He thinks it most likely that the polyneuritis followed a diphtheritic infection of the jungle sores.

Indian Journal of Medical Research, Calcutta

32:109-252 (Oct.) 1944. Partial Index

- Vitamin B₂ Deficiency as Cause of Eye Diseases in Bengal. E. O. Kirwan, K. Sen and N. Bose.—p. 109.
Estimation of Pyridoxine (Vitamin B₆) in Foods Using Rice-Moth Larvae (*Corcyra Cephalonica* St.). P. S. Sarma.—p. 117.
Antithiamine Factor in Carp. K. Bhagvat and P. Devi.—p. 123.
Inactivation of Thiamine by Certain Foodstuffs and Oil Seeds. K. Bhagvat and P. Devi.—p. 131.
Liberation of Tyrosine, Tryptophan, Cystine and Arginine from Proteins. K. Bhagvat and V. V. Sreeramamurthy.—p. 145.
Egg-White Injury (Induced Biotin Deficiency) in Rice-Moth Larvae (*Corcyra Cephalonica* St.). P. S. Sarma.—p. 149.
Studies on Destruction of Vitamin A in Shark Liver Oil. S. D. Rao.—p. 155.
Vitamin C in Pine Needles. N. K. Iyengar. B. C. Bose and B. Mukerji.—p. 165.
Method for Demonstration of Negri Bodies. S. McDonald.—p. 205.
Protozoan Parasite of Central Nervous System. N. Veeraraghavan.—p. 207.
Isolation of Strain of *Rickettsia Orientalis* from Cases of XK Typhus in Ceylon. R. B. Lucas.—p. 223.
In Vitro Test for Assay of Potency of Cobra Antivenene. M. L. Ahuja and A. G. Brooks.—p. 227.
Studies on Experimental Fluorine Poisoning in Rats. S. Ranganathan.—p. 233.
Studies in Vital Capacity. D. V. S. Reddy and P. B. Sastry.—p. 237.

Protozoan Parasite of Nervous System.—Veeraraghavan encountered forms in the midbrain of guinea pigs experimentally infected with rabies which have not, apparently, been previously described. The peculiar forms have been investigated over the past six years. The conclusion was reached that they are due to the presence of a parasite, probably protozoan in character, which is specific to the central nervous system. It has not been possible to identify this parasite with any previously described, such as *Encephalitozoon cuniculi*, or any known species of toxoplasma. The protozoan parasite was first encountered in the midbrains of guinea pigs infected with the jackal strain of rabies virus. The parasite, with the exception of certain cystic forms of doubtful significance, invariably occurred in the cytoplasm of nerve cells, particularly those ventral to the central canal of the midbrain. In a few cases, parasites were found also in the Purkinje cells of the cerebellum and in the hippocampus major. The smallest forms of the parasite encountered were minute "spores." They were regularly found in the midbrains of the naturally infected dogs and jackals and in the brains of guinea pigs inoculated with suspensions of their brains. The next stage of the parasite appeared to be the "ring" form. It might be round or oval, and it was variable in its position within the vacuole. Certain forms resembling the accolé forms of the malaria parasite were occasionally found. These consisted of a crescentic bridge of cytoplasm with a rounded chromatin dot. In slightly older forms the chromatin mass was slightly larger, the protoplasm was thickened and the parasite assumed a variety of shapes. Segmentation of the chromatin appeared to be the next stage in the development of the parasite. In the segmenting forms the protoplasm appeared to be a solid mass with a varying number of chromatin dots. No evidence was found to suggest that the various forms of the parasite were the result of alterations in the constituents of nerve cells. The possibility of the parasite being a natural infection common to dogs and jackals, unconnected with rabies infection, was investigated. Neither parasites nor Negri bodies were ever encountered in animals

without rabies. Certain stages in the life cycle of the protozoan parasite described appear to be "filtrable"; it has been possible to produce evidence of infection in experimental animals by the inoculation of brain suspensions passed through Berkefeld V and N candles. The protozoan parasite appears to be a specific infection of the central nervous system, and in spite of exhaustive searches it has never been observed in other organs and tissues. It was not observed except in association with natural or experimental rabies infection. The suggestion has been put forward that Negri bodies may represent a stage in the life cycle of the parasite.

Lancet, London

2:129-160 (Aug. 4) 1945

- Return of Doctor: Address to British Medical Association. H. S. Souttar.—p. 129.
Epidemiology of Acute Poliomyelitis in India Command. D. McAlpine.—p. 130.
Assessment of Male Fertility by Semen Analysis: Attempt to Standardize Methods. Clare Harvey and Margaret Hadley.—p. 134.
Ghomangioma: Report of 3 Cases. W. M. Beattie.—p. 137.
Secondarily Infected Liver Abscess Treated with Penicillin. R. S. Hunt.—p. 138.
Case of Syphilitic Wrist Drop. N. Hobhouse.—p. 141.

2:161-192 (Aug. 11) 1945

- Effort Syndrome. I. G. W. Hill and H. A. Dewar.—p. 161.
Costoclavicular Compression of Brachial Plexus and Subclavian Vessels. A. D. LeVay.—p. 164.
Natural Safeguards in General Anesthesia. W. B. Primrose.—p. 166.
Vaccinia Virus: Immunologic Unity of Different Strains. E. S. Horgan and M. A. Haseeb.—p. 170.
*Function of Autolytic Enzymes in Bacteriolysis by Penicillin. E. W. Todd.—p. 172.
Hematuria Associated with Hemorrhagic Diathesis. R. W. Evans and H. C. MacLaren.—p. 175.

Autolytic Enzymes in Bacteriolysis by Penicillin.—Todd shows that autolysis plays a large part in the lysis which occurs when organisms are killed by penicillin; they do not however entirely exclude the possibility that penicillin may have bacteriolytic properties apart from autolysis. The rate of lysis of bacteria in cultures containing penicillin depends on the production of autolysin. Organisms which produce large quantities of autolysin are lysed rapidly; those which produce less autolysin are lysed more slowly, while those which produce no autolysin are probably not lysed at all. Living bacteria are resistant to autolysis; they become sensitive when killed by penicillin, by heat or by suspension in isotonic solution of sodium chloride. The most rapid bactericidal action of penicillin occurs when organisms are at their maximal rate of multiplication. The rate of bacteriolysis in cultures containing penicillin is therefore governed by both the rate of multiplication and the production of autolysin. Certain bacteria which produce little autolysin are killed by penicillin without undergoing bacteriolysis; they are then rapidly lysed if autolysin is added to the dead culture. The most probable explanation of bacteriolysis in cultures containing penicillin is that the organisms are first killed by penicillin and then autolysed.

2:193-224 (Aug. 18) 1945

- Neurosurgery in Eastern Theater of War. R. T. Johnson and R. C. S. Dick.—p. 193.
Nicotinamide Methochloride Elimination Tests on Normal and Nicotinamide Deficient Persons. P. Ellinger, R. Benesch, with clinical addendum by S. W. Hardwick.—p. 197.
Polyarteritis Nodosa Developing During Antisyphilitic Treatment. H. G. Miller and M. G. Nelson.—p. 200.
*Intestinal Mucosa in Ulcerative Colitis. A. M. Gill.—p. 202.
Psychiatric Factors in Peripheral Vasoneuropathy After Chilling. J. W. Osborne and J. Cowen.—p. 204.
Selection of Patients for Blood Transfusion. H. Conway.—p. 206.

2:225-260 (Aug. 25) 1945

- Teaching of Medicine. R. S. Aitken.—p. 225.
Education of a Surgeon. W. H. Ogilvie.—p. 229.
Training of General Practitioner. H. Crichton-Miller.—p. 231.
Visual Education. A. S. V. Thomas.—p. 234.
Health Education Through Isotype. O. Neurath.—p. 236.

Intestinal Mucosa in Ulcerative Colitis.—The course of ulcerative colitis with its tendency to spontaneous remissions and relapses led Gill to consider that in some cases at least the condition might be a deficiency disease. Preliminary inves-

tigations suggested that the missing hypothetical factor might be present in or produced by the intestine. Feeding experiments in 1 case over several years showed that remissions could be induced regularly by giving uncooked pig's small intestine by mouth. Relapses always followed when this treatment was stopped. Remissions have also been induced in other cases in which similar raw material was given; others, however, have shown no response. Pig's small intestinal mucosa, dried and defatted, given by mouth in powder form, has also induced remissions in some cases. Those patients who respond relapse when the treatment is stopped. Of the dried mucosal preparations tried, one has little or no effect, whereas the other appears to be as effective as the raw material. Experiments with a parenteral extract have so far been unsuccessful. The results obtained with this treatment do not appear to be coincidental or psychologic: they are compatible with the deficiency theory advanced, but a local effect in the colon is not yet excluded. The author thinks that the term "ulcerative colitis" must cover more than one disease, or that more than one etiologic factor is responsible for the syndrome, since it is impossible to forecast whether or not a given case will respond to this form of treatment.

Acta Medica Scandinavica, Stockholm

120:1-193 (Jan. 15) 1945. Partial Index

- Preexcitation and Auricular Fibrillation. S. Åkesson.—p. 1.
*Prognosis of Essential Hypertension, with Remarks on Indications for Operative Treatment. H. Rasmussen and J. Bøe.—p. 12.
Importance of Duodenal Glands of Brunner to Formation of Red Blood Corpuscles in Swine. C. L. S. Bohn, E. Landboe-Christensen and C. M. Plum.—p. 32.
Distribution of Poliomyelitis Virus in Intestines of Normal Mice. S. Gard.—p. 40.
*Cardiac and Respiratory Neurosis After Contusions of Chest Wall. H. Heckscher.—p. 53.
Role of Tyrosine in Pernicious Anemia. E. Jacobsen and C. M. Plum.—p. 81.
After-Examination of Surgical and Nonsurgical Cases Showing "Clinical Symptoms of Herniated Disk." L. Kirstein.—p. 93.
Rhythmic Variations of Liver Glycogen and Pyruvic Acid of Blood in Experimental Obstructive Jaundice. Y. Edlund and H. Holmgren.—p. 107.
*Gastritis. A. Holtermann and H. Myhre.—p. 130.

Prognosis of Essential Hypertension.—One hundred patients with hypertension studied in 1936 to 1938 were reexamined in 1943 with consideration of the prognostic value of the earlier pathologic findings in the cardiovascular and renal systems. Fifty-two patients had died, 44 were still living and 4 had not been traced. Of the 44 survivors, 36 were women and 8 were men. The cause of death of 2 patients was unknown, while 13 died of cardiac insufficiency (26 per cent of the number of deaths), 9 died of myocardial infarction (18 per cent of the deaths), 19 (38 per cent) died of apoplexy and 3 (6 per cent) died of uremia. While the prognosis of myocardial infarction and uremia may be difficult, as they show no distinct relation to the earlier findings in the cardiovascular and renal systems, cardiac insufficiency exhibits a distinct correlation to the size of the heart and to the electrocardiographic alterations (left ventricular hypertrophy). The apoplexies show especially clear relationship to the height of the blood pressure, both the systolic and particularly the diastolic. Nearly one third of those with systolic pressure above 200 and more than one third of those with diastolic pressure above 125 died of apoplexy during the observation period. The surgical treatment of hypertension may in these groups be considered from the standpoint of prophylaxis of cerebral hemorrhage. Reinvestigation of the blood pressure showed that it was increased in only 5 patients. Most often it is stationary and in one fourth of the patients distinctly reduced, while in 2 patients it has become normal. Although in 1 patient there has developed nephrosclerosis, the 39 patients reexamined show primarily a slow development of hypertensive heart disease, sometimes with myocardial infarction and angina pectoris, sometimes with cardiac enlargement, this disease being electrocardiographically characterized by development of left ventricular hypertrophy in different stages.

Traumatic Cardiac and Respiratory Neurosis.—Heckscher presents a survey of a series of 22 patients suffering from the sequelae of thoracic contusions. Twenty of these patients were men and 2 were women. They were between

the ages of 33 and 60. Most of the complaints were not caused by any organic heart lesions but by the bruises inflicted on the chest wall and by a traumatic cardiac and respiratory neurosis. The symptoms of this traumatic neurosis were very much like the symptoms of the nontraumatic cardiac and respiratory neurosis. Conspicuous subjective symptoms were dyspnea on exertion or paroxysmal shortness of breath at rest, a feeling of oppression, palpitations, pain in the chest or in the back, anxiety and in some cases pronounced hypochondriasis or a real anguish. The objective symptoms were those which together form the pathognomonic triad of pulmonary emphysema: (a) the respiration changed from abdominal to mixed or purely thoracic type, (b) the changed posture, i. e., postural anomalies and (c) widening of the thoracic cavity and expansion of the lungs. In addition some patients presented the special neurotic type of respiration with sporadic, forced inspirations followed by delayed return to normal level. Some patients presented a mutual interdependence of pulse rate and respiration, both being influenced decidedly more by psychic alterations than by physical exercise, so that paradoxical reactions to tests of heart function could be seen, quite unlike the reactions of patients suffering from organic heart failure. The pains in the chest or back presented by the majority of the patients were partly caused by the bruised muscles of the chest wall and the back and partly by the functional changes in the muscles overstrained by static work. As these patients had displayed habitual anomalies of posture even before the accident, it is likely that they have contributed to the development of the disease. Differential diagnosis between functional and organic disorders of the heart must be based on the absence or the presence of symptoms absolutely pathognomonic for an organic heart disease. An erroneous diagnosis of organic heart failure may lead to a lasting invalidism of the patient. Physical therapy with exercises instituted soon after the accident may be of considerable help in preventing fixation of the chest, eliminating at the same time the tendency to persisting functional disturbances.

Gastritis.—Holtermann and Myhre found that gastritis accompanied duodenal ulcer in every case. In nearly half of their ulcer cases the gastritis was of hypertrophic type. In certain cases gastritis may consist only of a reddening and mild edema caused by hyperfunction. After a dietary course ulcer patients with hypertrophy and superficial catarrh may be improved with regard to the superficial catarrh, but hypertrophy will persist in the form of thickening and irregularity of the folds. Gastritis associated with duodenal ulcer was generally more pronounced and diffuse than that in gastric ulcer in which the mucosa may present a normal aspect after a successful dietary course. The subjective symptomatology of gastritis varies considerably. Sedimentation tests were performed in 135 cases. These tests revealed that an increased amount of mucous sediment formed within twenty-four hours in the gastric juice of fasting patients is to be considered as an important objective symptom. A series of nitrogen determinations in the gastric juice from fasting persons showed little correlation with the gastroscopic and roentgenologic findings and also with the results of the sedimentation tests. Nitrogen determination is of little value as a diagnostic sign. Gastroscopy is the most reliable diagnostic method and may likewise aid in classification. The gastritis may also be demonstrated roentgenologically. Better information will be obtained when small amounts of contrast medium are spread evenly over the mucosa. The method used by the authors consists in aspirating the gastric juice of the fasting patient with a duodenal tube during fluoroscopy. The mucosal folds must not be separated by outside pressure, and the supine position of the patient is preferable to the prone position. An irregular course of the folds often suggests gastritis, especially if it is associated with a certain degree of thickening. To evaluate the thickening of the folds, the form and size of the stomach are to be considered likewise. There is a fair chance of a correct diagnosis with an ordinary angular stomach. Negative roentgenologic findings do not exclude gastritis. Differential diagnosis between hypertrophic gastritis and superficial catarrh and atrophy should not be based on roentgenologic findings.

Book Notices

A Manual of Surgical Anatomy. Prepared Under the Auspices of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. By Tom Jones and W. C. Shepard. Cloth. Price, \$5. Pp. 195, with illustrations. Philadelphia & London: W. B. Saunders Company, 1945.

This is the last volume of the *Military Surgical Manuals* edited by the Committee on Surgery of the National Research Council for medical officers of the armed forces. While victory has fortunately diminished the opportunities for its use as a field manual, it will have a much more lasting value than its predecessors in the series. It was originally planned as a concise atlas of applied surgical anatomy of a format that would make it easy to carry and use under campaign and battle conditions. It is a visual presentation of anatomic regions most likely to be of importance to the surgeon caring for lesions produced by weapons of warfare. The material for presentation has been well selected from that point of view. The illustrations are new, having been redrawn from older cuts or evolved specially for this manual. They are line drawings, in many of which color has been skilfully used to aid greatly in the visual effects. The drawings are large enough to be easily studied, while the labels in English terminology are printed in large type so as to be clearly readable. The contents are arranged in four sections: part I, the head and neck; part II, the trunk-thorax, abdomen and pelvis; part III, the upper extremity; part IV, the lower extremity. Surgical approaches presented with each of these sections show with accuracy and clarity the approved avenues of approach used in the surgery of today. The incisions shown for operations on the thorax are especially valuable, as they were developed for this book and brought together for the first time in these illustrations. It is hoped that in the next edition the abdominal wall will receive similar treatment. There is an explanatory index in which are listed and defined the anatomic structures shown in the charts; the Standard English and B. N. A. terms are both given when there is a difference of anatomic name. That the book is the result of the collaboration of Mr. Tom Jones and Mr. W. C. Shepard in a field of surgical illustrations assures immediately a work of a high quality, and they are to be congratulated on the result of their labor, carried out with great zeal and haste in the face of national emergency. While the urgency for the manual has disappeared, the need for such a manual in civilian surgery remains. Anatomy cannot be learned from books, but such an atlas serves always as a convenient refresher to the surgical mind, and the surgical approaches are a matter of interest to all surgeons. This manual is heartily recommended to students of surgical anatomy, to those studying surgery and to those practicing the surgical arts.

The Principal Nervous Pathways: Neurological Charts and Schemas with Explanatory Notes. By Andrew Theodore Rasmussen, Ph.D., Professor of Neurology, Department of Anatomy, University of Minnesota Medical School, Minneapolis, Minn. Third edition. Cloth. Price, \$3.50. Pp. 73, with 28 illustrations. New York: Macmillan Company, 1945.

This excellent monograph of nervous pathways should be in the possession of every neurologist, neurophysiologist and neurosurgeon. Former editions have proved on many occasions to be most helpful in cerebrospinal localization because the author has followed the concept of correlation of function and structure in the central nervous system, which should be the method of teaching. The illustrations speak for themselves. The work is the best of its kind for ready reference and study and is highly recommended.

A Manual of Ophthalmology for Medical Officers. By Lt.-Col. B. W. Ryeroff, M.D., D.O.M.S., F.R.C.S., Surgeon and Dean, Royal Eye Hospital, London. Cloth. Price, \$2.50. Pp. 95, with 59 illustrations. New York & London: Paul B. Hoeber, Inc., 1945.

This book is an outline presenting in brief form the methods of examination and the common diseases of the eyes and eye injuries seen in military practice by the general medical officer. It is of little value to the practicing ophthalmologist. It might be useful to the industrial surgeon who does not have a consulting ophthalmologist available.

Mental Disorders in Later Life. Edited by Oscar J. Kaplan. Cloth. Price, \$5. Pp. 436, with 14 illustrations. Stanford University: Stanford University Press; London: Oxford University Press, 1945.

The increasing number of books dealing with the problems of old age bears testimony to the growing interest in the subject. Dr. Kaplan well describes the nature of this book in the preface when he says that it does not pretend to be an exhaustive treatment of the subject of mental disorders in later life but "is rather a collection of essays selected to indicate the level of present achievement in this area. . . In this book we see the pattern of future attack upon the mental diseases of later life. . . through the close collaboration of psychiatrists, statisticians, physiologists, sociologists and psychologists." Seventeen contributors have written separate chapters, which cover virtually all phases of the subject. Of particular interest are the chapters on the physiologic and the psychologic aspects of aging, on the neuroses of later maturity, on the senile psychoses and cerebral arteriosclerosis, on psychotherapy in the older person and on mental hygiene in later maturity. This book sounds a more optimistic note for the aging and aged patient than most publications in this field. It emphasizes the point that much more can be done for the aging than for the aged and that the time to prepare for old age is while one is still in the vigor of maturity. The book is a mine of information for the physician who wants to learn more about recent important advances that have been made in understanding the senescent and the senile patient.

Klinische und erbblologische Untersuchungen über die Heredoataxien. Von Torsten Sjögren. Acta psychiatrica et neurologica Supplementum XXVII. Paper. Price, 15 Dan. Kron. Pp. 200, with 6 illustrations. Copenhagen: Ejnar Munksgaard, 1943.

This is a monograph on the hereditary ataxias written by the author from material studied in Göteborg and Stockholm. There are six chapters: the material and its classification, the collection of the author's cases, clinical analyses, hereditary studies, summary and bibliography. This is an excellent contribution in relation to genealogical and clinical studies in 188 cases. Three thousand persons were studied from the hereditary point of view.

The Chemical Formulary: A Collection of Valuable, Timely, Practical Commercial Formulae and Recipes for Making Thousands of Products in Many Fields of Industry. Volume VII. Editor-in-Chief: H. Bennett. Cloth. Price, \$6. Pp. 474. Brooklyn: Chemical Publishing Co., Inc., 1945.

As stated in the preface, the Chemical Formulary is a collection of valuable and practical formulas and recipes, compiled with the assistance of many contributors from numerous fields of industry. As in other volumes the methods of preparation are given in many instances, which is of considerable aid. The book is divided into many parts relative to the different types of formulas. This volume, with its various new data and the enlargement of the directory of sources of chemicals and supplies, will prove to be of great value in the technical field. However, the book lends little value to the physician but a hand to medical quackery. It is to be commended in that it makes no claims for remedial action and thereby assumes no responsibility for its therapeutic uses.

Diseases of the Nervous System Described for Practitioners and Students. By F. M. R. Walshe, O.B.E., M.D., D.Sc., Physician in Charge of the Neurological Department, University College Hospital, London. Fourth edition. Cloth. Price, \$1.50. Pp. 360, with 51 illustrations. Baltimore: William Wood & Company, 1945.

This tremendously practical and easily understandable book should become more popular in the medical schools of the United States. It is made up of twenty-nine chapters divided into two parts. Part one takes up the general principles of neurologic diagnosis and part two gives a descriptive account of the more common diseases of the nervous system. The book is written for use by the student and the general practitioner. It should be in the office of all medical men. The author has written his book from a practical standpoint so that the reader will not have to remember individual symptoms of each nervous disease but has to learn those symptoms which occur in lesions of various structures or systems. This book is highly recommended.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

THE THIRD STAGE OF LABOR

To the Editor:—Is there really a third stage of labor or is it simply a continuation of the second stage? Is it not a fact that with the final contraction which expels the fetus the placenta is completely severed from the uterine wall and then acts only as a foreign body in the uterus and should be manually expelled at once?

P. V. Janse, M.D., Algona, Iowa.

ANSWER:—The third stage of labor comprises two phases, separation and expulsion. The normal mechanism rarely separates the placenta completely as the baby leaves the uterus. In many instances this undoubtedly happens, so that the phase of separation can be designated as part of the second stage. More often partial separation takes place at the time of expulsion of the fetus. Complete separation is accomplished by resumption of uterine activity. The expression of the placenta should not take place until evidences of complete separation are apparent. Premature attempts at the expression of an incompletely separated placenta may lead to uterine atony and excessive bleeding. Mismanagement of this phase of the third stage is the most common cause of postpartum hemorrhage.

The ineffective third stage of labor has led to the use of oxytocic drugs during this period. To accomplish complete separation of the placenta at the time the baby leaves the uterus, M. Edward Davis (The Use of Ergonovine in the Placental Stage of Labor, *Am. J. Obst. & Gynec.* 43:775 [May] 1942) has suggested the administration of 0.2 mg. of ergonovine intravenously just as the head is being delivered. Twenty or thirty seconds should intervene before the rest of the baby is born. The powerful uterine contraction initiated by the ergonovine results in the immediate and complete separation of the placenta, as the placental site shrinks because of the uterine contraction. Expression of the placenta should follow immediately. Improper timing of this procedure may result in the incarceration of the placenta in a contraction zone at the lower portion of the uterus.

This artificial conduct of the third stage has had extensive clinical experience during the last five years. It has resulted in a great decrease in the blood loss during placental separation, as well as in a definite reduction in the complications associated with the placental stage.

CESSATION OF MIGRAINE DURING PREGNANCY

To the Editor:—A woman who has been subject to migraine became pregnant for the first time after nineteen years of married life and delivered a normal baby. The baby is now 3 weeks old and the headaches, after absence during the pregnancy, have returned.

J. Huntley Boyd, M.D., Trenton, Mich.

ANSWER:—Among women with migraine it is the rule for headaches to occur in relation to menstruation, to be absent during pregnancy and to fade out at the menopause. These circumstances point to the importance of the sex hormones in causing migraine attacks and suggest that appropriate endocrine therapy or procedures which would neutralize the effect of the menstrual cycle on the sympathetic nervous system would be of value in the treatment of these patients. Unfortunately there do not seem to be any consistently encouraging reports of endocrine therapy. Clinical research on this subject is long overdue.

EDIBLE FROGS

To the Editor:—We have in our locality two species of frog: One is the green head and is highly esteemed as food; the other is the leopard frog, which has no green coloring. As youngsters we referred to the latter variety as the "stink" frog. The habits of the two varieties so far as I know appear to be identical. Is there any reason why the leopard variety would not be a safe article of food?

W. C. Hensyl, M.D., Berwick, Pa.

ANSWER:—The leopard frog is eaten in several parts of this country. There seems to be no reason for its being less highly esteemed than the green frog. The other large species of the genus *Rana* are also edible.

Reference:

Wright, A. H.: Frogs: Their Natural History and Utilization, U. S. Bureau of Fisheries, Doc. 888, 1920, pp. 1-44.

MECHANISM OF DIABETIC COMA

To the Editor:—It has been stated that a lack of insulin is the fundamental cause of diabetic coma. The lack of insulin causes a reduced glucose oxidation throughout the body. This reduced glucose oxidation is particularly manifest in those organs which burn glucose practically exclusively for energy purposes such as the brain. For this reason it would be proper to state that the immediate cause of diabetic stupor and coma is a reduced glucose oxidation by the brain. A similar mechanism is present in hypoglycemic coma, namely a reduced glucose oxidation resulting from the reduced delivery of glucose to the brain. The final common effect on the brain will be the same, therefore, in diabetic and hypoglycemic coma, and the common factor is a pathologically reduced glucose oxidation. Diabetic coma may not be attributed to ketone bodies, because these are not always present in pathologic amounts. Further, they may be present in pathologic amounts in diabetes without coma. The ketosis is secondary to the deranged carbohydrate metabolism and disappears when the deranged metabolism is restored with insulin. Ketosis may also be present in hypoglycemic states because of the reduced glucose oxidation. Reduced glucose utilization is always accompanied by reduced oxygen consumption. This has been shown by several investigators on both man and the dog as well as on isolated tissues. Cells consume oxygen in proportion as they utilize glucose. Restoration of glucose oxidation in diabetic coma by insulin is apparently brought about by glycogen synthesis in the liver. The liver in diabetic coma has a low glycogen content. With insulin the glycogen stores are built up. It is believed by some that such glycogen breaks down, yielding gamma glucose, a form which is readily oxidized by the brain and other tissues. The blood sugar in untreated diabetic coma may be said to exist chiefly as alpha-beta glucose, a form which is not readily oxidized by living cells. Insulin brings about recovery by taking glucose from the blood, bringing about glycogen synthesis in the liver, which then breaks down to yield the more readily oxidizable form, namely gamma glucose.

Benjamin P. Sandler, Lieutenant Commander (MC), U.S.N.R.

ANSWER:—There are several erroneous premises and conclusions in the foregoing:

1. It cannot be said that diabetic coma and hypoglycemic coma are both the result of the failure of the brain to burn glucose. For, while this is true in the latter condition, because of a failure of delivery of adequate amounts of glucose to the brain as a result of the low blood sugar levels, it has been shown (Himwich, H. E., and Nahum, L. H.: The Respiratory Quotient of the Brain, *Am. J. Physiol.* 101:446 [Aug.] 1932) that in the total absence of insulin the brain is able to metabolize carbohydrates and maintain its respiratory quotient at 1.0. The wide differences in symptomatology of diabetic and hypoglycemic coma lend support to a difference in etiology of the two.

2. It is indeed doubtful that diabetic coma can develop in the absence of ketosis. The ketone bodies certainly cannot be excused from an important etiologic role in diabetic coma simply because they may be present at times without the occurrence of full blown diabetic coma. Their role in producing the disturbed acid-base relationship, acidosis and dehydration is well known. At least acetoacetic acid is believed to be toxic per se (Best, C. H., and Taylor, N. D.: The Physiological Basis of Medical Practice: A University of Toronto Text in Applied Physiology, ed. 3, Baltimore, Williams & Wilkins Company, 1943, p. 963). The depressed consciousness which may occur in the clinical syndrome we call diabetic coma is probably the result of several interdependent metabolic derangements, the sum of which, rather than any one singly, is responsible.

3. Ketosis apparently is not due to an inability of the tissues to oxidize glucose but rather seems to occur in conditions in which liver glycogen is seriously depleted (Best and Taylor: The Physiological Basis of Medical Practice, p. 1019. Peters, J. P.: A New Frame for Metabolism, *Am. Scientist*, 31:36 [Jan.] 1943). Thus it is a finding in starvation and in phlorhizin diabetes, in which liver glycogen drops very low and energy requirements must be supplied largely by utilization of fats. Furthermore, in the depancreatized animal large doses of glucose administered intravenously will decrease ketonemia and ketonuria concomitant with storage of glycogen in the liver in spite of the fact that the glucose probably is not being burned by the peripheral tissues (Mirsky, I. A.; Heiman, J. D., and Broh-Kalun, R. H.: The Antiketogenic Action of Glucose in the Absence of Insulin, *Am. J. Physiol.* 118:290 [Feb.] 1937).

Ketosis is not a finding in hypoglycemia, except in rare instances, as liver glycogen is not depleted in this condition. It is a rare possibility in renal diabetes with a very low renal glucose threshold (resembling the phlorhizinized animal [Wierzechowski, M.: Intermediary Carbohydrate Metabolism: Vital Action of Glucose in Phlorhizin Diabetes, *J. Biol. Chem.* 73:445 (June) 1927]) and in von Gierke's disease. In the former condition, depletion of liver glycogen occurs before ketonuria and hypoglycemia appear, and in the latter the liver, though filled with glycogen, is functionally without glycogen, as the glycogen present cannot be utilized. Infiltration of the liver with fat in the latter condition is common in the glycogen-depleted liver.

4. The question whether insulin acts to produce an active, or gamma glucose is still completely hypothetical. As far as can be determined, there is no definite evidence on this point.

PERSISTENT URINARY OBSTRUCTION AND INFECTION

To the Editor:—A man aged 28 has been under treatment for urinary symptoms of about two and a half years' duration. The symptoms began about January 1943 while at sea, with sudden inability to void. He passed a urinary calculus, and this was followed by pyuria. Examination of the kidney, ureter and bladder revealed an additional renal calculus in the right inferior calyx and a right ureteral dilatation plus a right hydronephrosis. Further studies in the next few months revealed a urethral stricture and chronic cystitis. He was treated with many cystoscopies and lavage plus several courses of sulfathiazole and sulfapyridine. His urgency, frequency and dysuria improved slightly. He was readmitted to a navy hospital November 1943 to May 1944. During this stay he underwent cystoscopy; at this time films revealed contraction of the vesical neck, and a transurethral resection of the prostate was done. Following this he passed the previously mentioned stone, but considerable difficulty in urination remained. He became icteric, apparently as a result of sulfonamide medication. Liver function tests showed "considerable hepatic damage." The cystitis appeared to be due to *Escherichia coli*. Courses of penicillin, tyrothricin lavage and mandelic acid were of no avail. Urethral dilations have been done, but his urinary frequency (about every fifteen to thirty minutes) and severe tenesmus remain. The urine is full of white blood cells with scattered red blood cells; albumin is 2 plus. The blood cells appear normal. Several cultures of the urine showed hemolytic streptococci and nonhemolytic streptococci; others showed *Alcaligenes fecalis*. Is there anything further that can be done for this man? Of course the question of the newer drugs such as streptothricin has been brought up. Is it possible that one of these may be tried safely? It is felt that further courses of sulfonamides are inadvisable, since he has had severe reactions to them.

Jerome S. Davis, M.D., P. A. Surg., U. S. P. H. S. (R.)

ANSWER:—Although a bladder neck obstruction has been found and presumably removed the patient undoubtedly has further obstruction at that point as well as having an obstructing hydronephrosis; both factors are responsible for the persistence of this man's infection.

There does not seem to be any rationale to the continuation of all sorts of urinary antiseptics in a patient such as the one described. Thorough investigation of the cause of the obstruction should be made, with its relief, if possible, after which thorough prostatic and seminal vesicular massage should be given together with medicaments which would tend to keep the urine acid. Perhaps even this treatment will not be completely curative.

TINNITUS

To the Editor:—A white man aged 28, weighing 230 pounds (104 Kg.), 73 inches (185 cm.) tall, has had a constant moderately high pitched tinnitus in the right ear for the last six weeks. The drums and external auditory canals are normal except for a slight dilatation of the small blood vessel on the right drum running over the handle of the malleus. Both eustachian tubes are open and click on swallowing. Hearing does not seem to be impaired, but no audiometer tests have been done. A small amount of soft wax present was syringed out, but the tinnitus did not stop. The eyegrounds are normal and no scotomas, headaches, vertigo or vomiting have been present. "Neurologic examination revealed no abnormalities. On clenching the teeth tightly the volume of the tinnitus is increased. X-ray of the teeth in the right upper jaw is normal, but several large cavities have been recently filled with silver. The blood count, urinalysis and blood pressure have been normal.

Oscar J. Balchum, M.D., Detroit.

ANSWER:—In the absence of other evident causes and in the presence of an apparently normal middle ear, as shown by the absence of important changes in the drum membrane, no satisfactory solution is possible in the problem presented without a careful testing of the hearing ability. The two most likely causes would be auditory nerve deafness and otosclerosis. Each can be diagnosed by tuning fork and audiometric examinations. There are cases of tinnitus in which no great loss of hearing is demonstrable on early examination. Only after a number of tests and the passage of some time can it be possible to assign the tinnitus definitely to a lesion in the hearing apparatus.

PASSAGE OF PENNY FROM STOMACH

To the Editor:—A boy aged 3 years has had a penny in his stomach for about two weeks. I have had him on a high residue diet, but the penny has not yet passed. The presence of the penny in the stomach does not seem to be causing him any inconvenience, but I am afraid that it may if it is allowed to remain over too long a time. At what age will the outlet of the stomach become adequate to allow the passage of the penny?

J. A. Orris, M.D., Windber, Pa.

ANSWER:—In all probability there is sufficient spasm of the outlet of the stomach to prevent the penny from passing. X-ray observations of stomachs of children at this age indicate that they are not so narrow as to prevent the passage of a penny. The patient might receive antispasmodics, particularly atropine, to allow the passage of the foreign body. Atropine in doses of $\frac{1}{400}$ or $\frac{1}{600}$ grain (0.16 or 0.1 mg.) administered three times daily might prove distinctly beneficial.

ANESTHETIC ACTION OF MAGNESIUM SULFATE

To the Editor:—It has been claimed that a 0.75 per cent solution of magnesium sulfate in water, injected around nerves or nerve roots, results in a prolonged anesthesia. 1. Is this claim well proved and generally accepted? 2. Could any possible harm result from the indiscriminate and wide use of 0.75 per cent magnesium sulfate solution as a solvent for the commonly used local anesthetics such as procaine and metycaine instead of water or saline solution?

Heinrich Lamm, M.D., La Feria, Texas.

ANSWER:—1. No.

2. S. J. Meltzer (*Berl. klin. Wchschr.* 1:73, 1906) experimented with this substance. He gave it subcutaneously, intravenously and intraspinally. He injected 1 cc. of a 25 per cent sterile solution of magnesium sulfate for each 12 Kg. of body weight and found that after three to four hours it was possible to operate painlessly on the legs and pelvic regions. He concluded that general anesthesia may often be produced by the intraspinal and subcutaneous injection of magnesium sulfate. From these experiments it appears that the use of a 0.75 per cent solution of magnesium sulfate as a solvent for the common local anesthetic agents might prolong the anesthesia, but the indiscriminate use of this solution would probably produce cerebral depression and a resultant general anesthesia.

Meltzer and Auer (*J. Exper. Med.* 123:641, 1916) stated that the application of solutions of magnesium salts to nerve trunks interrupted conduction. A more or less complete block for afferent and efferent, for normal or artificial, impulses was established. This could be accomplished by hypertonic, isotonic and hypotonic solutions. The more concentrated the solution, the sooner the effect was established. In general, it takes more time for magnesium solutions to cause block of a nerve trunk than for other known local or general anesthetics.

DISINFECTION OF BARBERS' INSTRUMENTS AND STOCKINGS

To the Editor:—What solution or solutions should be used to sterilize barbers' instruments or other instruments that could be a means of transmittal of ringworm?

M.D., Iowa.

To the Editor:—Could you suggest a simple method of disinfecting stockings to destroy fungi—one that will not injure the stockings themselves? For your information, formaldehyde vapor removes the dye from nylon stockings.

M.D., California.

ANSWER:—1. The best means of sterilizing barbers' instruments is boiling them in sterile water. If this is not possible, they should be soaked in a 2 per cent cresol solution after being used on a person with ringworm of the scalp.

2. A dish of formaldehyde placed in a corner of a closed box and the stockings left in the box for twenty-four to forty-eight hours will generally kill the fungus. If the formaldehyde vapor removes the dye, the only thing that can be done is to wash the stockings repeatedly and thoroughly in soap and water.

TINGLING OF SHOULDER AND CERVICAL RIB

To the Editor:—A man awakened with a stiff neck after sleeping in a constrained position with his head bent over to the left. Later that day he had a tingling sensation in the left subclavicular fossa, similar to a galvanic treatment, which later had a sensation of being paralyzed almost to the point of a tetanic reaction. There is no particular pain, but the sensation "stops" him momentarily. Use of the left arm in an extended position seems to bring it on. In sleeping on the right side the tingling is felt first and can be stopped by quickly lying on the left side. The shoulder first and can be stopped by x-rayed and nothing can be seen. The blood cap and the chest have been x-rayed and nothing can be seen. The blood pressure is 185/110. The Wassermann reaction is negative for syphilis. The patient is otherwise in good physical condition. Is this a scalenus anticus syndrome?

M.D., Missouri.

ANSWER:—Careful x-rays should be taken of the cervical spine to be certain that the patient does not have a cervical rib. If one is found, it will have to be decided whether or not it is causing the complaint. Cervical ribs do not always cause trouble. It could be a scalenus anticus syndrome but certainly of an unusual type. The patient's hypertension should be taken into consideration in treatment.

THYROID, METHYL TESTOSTERONE AND IMPOTENCE

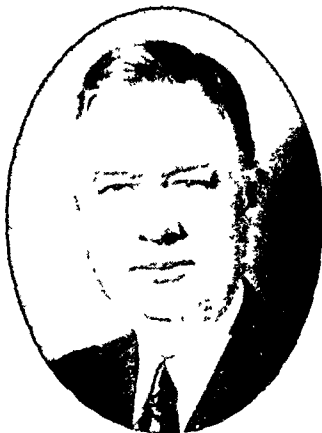
To the Editor:—Has any improvement in cases of impotence ever been ascribed to thyroid? Has any loss of potency ever followed the use of methyl testosterone?

M.D., Illinois

ANSWER:—If impotence is associated with a thyroid deficiency it may be improved by the administration of desiccated thyroid. This form of treatment is not effective in the absence of a thyroid deficiency. Information on any loss of potency following the use of methyl testosterone has not been found.



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SULFADIAZINE RESISTANT STRAINS OF BETA HEMOLYTIC STREPTOCOCCI

APPEARANCE DURING THE COURSE OF SULFADIAZINE
PROPHYLAXIS AT A LARGE NAVAL TRAINING
CENTER

EPIDEMIOLOGY UNIT NUMBER 22

A previous paper has described the pronounced reduction of streptococcic disease which occurred at a large naval training center in the Northwest as the result of sulfadiazine prophylaxis.¹ The present report deals with the loss of effectiveness of this prophylaxis as the result of the appearance of sulfadiazine resistant strains.

On March 1, 1944 all personnel at the center were placed on sulfadiazine prophylaxis and no control studies were carried out. Shortly thereafter, during this month of March, there was a decided increase in streptococcic disease in Camp Hill, one of the recruit camps, which at the beginning of March had been on sulfadiazine prophylaxis for a period of approximately three months. Streptococcic infections were approximately four times as frequent as they were in January, when the drug had been most effective (table 1). Furthermore, during January only 22 per cent of admitted patients with respiratory illness had throat cultures positive for beta hemolytic streptococci, whereas in March 47 per cent of such patients had positive cultures. A similar rise occurred in April in all camps at the center, which was confirmed clinically and bacteriologically.

This outbreak was investigated in Camp Hill and in other areas during April. It was found that:

1. The increase was not due to failure of the recruits to take the drug or absorb it.
2. The increase had no relation to the length of time the camp had been on sulfadiazine.

Capt William P. Mull, senior medical officer of the center, cooperated and helped.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writers and are not to be considered as reflecting the policies of the Navy Department.

The members of Epidemiology Unit Number 22 during the period of this study were Donald C. Young, Comdr. (MC), U.S.N.R.; B. B. Breese, Comdr. (MC), U.S.N.R.; A. J. Errington, Comdr. (MC), U.S.N.R.; Walter Stoefler, Comdr. (MC), U.S.N.R.; Fred C. Zulske, Lns. (HC), U.S.N.; Russel R. Harrison, Ch. Pharm. (HC), U.S.N.; Grove G. Wiley, Ch. Pharm. (HS), U.S.N.R.; Edward L. Warmanen, CPhM, U.S.N.R.; William D. Harrison, PhM 1c, U.S.N.R.; Carl E. Johnson, PhM 1c, U.S.N.R.; Louis E. Wagshol, PhM 1c, U.S.N.R.; Peter Tacket, PhM 1c, U.S.N.R.; LeRoy V. Grussendorf, PhM 1c, U.S.N.R.; Alfred H. Rodger, PhM 2c, U.S.N.R.; Gene W. Johnston, PhM 2c, U.S.N.R.; Fred Elias, PhM 2c, U.S.N.R.; Jack Linder, PhM 2c, U.S.N.R.; Sam Pollock, PhM 2c, U.S.N.R., and Herbert Stevens, PhM 3c, U.S.N.R.

1. The Prevention of Respiratory Tract Bacterial Infections by Sulfadiazine, *U. S. Navy, Epidemiology Unit No. 22, Bureau of Medicine and Surgery, Navy Department*, 1944.

3. At the same time the year before there had been a definite increase in streptococcic infections at the center.

4. A rising rate of streptococcic infection was reported by the Public Health Service in the country as a whole during this same period.

5. Crude tests on in vitro sulfadiazine resistance made in our laboratory without eliminating the sulfonamide inhibitors present in most mediums showed no evidence of sulfadiazine resistance.

For these reasons, and because no controlled study was being carried out, it was felt at that time that this rise was probably seasonal and not due to the development of sulfadiazine resistant strains.

However, in May the results of the typing of the streptococci obtained from the patients in Camp Hill were reported from the National Naval Medical Center's Streptococcus Typing Center. A remarkable change had occurred in the distribution of group A beta hemolytic streptococci. Type 19 had, in the early part of the program, been responsible for approximately 28 per cent of the total group A streptococcic infections in Camp Hill. During April and May it was responsible for 95 per cent of such infections. This relative increase of the frequency of type 19 infections was later found to be general over the center (chart 1).

This predominance of one type and the disappearance of other types in the face of a rising rate of streptococcic disease in recruits who had been taking sulfadiazine prophylactically suggested that this organism had become relatively sulfadiazine resistant, and thus our earlier premise that the increase was seasonal was fallacious.

With the initiation of sulfadiazine prophylaxis, the possibility of the appearance of strains of beta hemolytic streptococci resistant to this drug was recognized. Lieut. Comdr. Armine Wilson had, for some time, been working on an in vitro test for resistance of streptococci. This test required the elimination of sulfonamide inhibitors present in all common mediums. Although modified to some extent later, it was perfected to the point where it could be applied by the early part of June. The technic of the test has been described elsewhere by Wilson.² It was based on the ability of streptococci to grow in a semisynthetic medium, relatively free of sulfonamide inhibitors, to which sodium sulfadiazine had been added to give a final concentration of 0.1, 5, 25 and 125 mg. per hundred cubic centimeters of the drug. The resistance to sulfadiazine is measured by the ability of these concentrations to inhibit growth and was read accordingly. Thus, if a strain of streptococcus grew in tubes containing 0.1 and 5 mg. of sulfadiazine but did not grow in concentrations of 25 and 125 mg., the

2. Wilson, Armine T. Method for Testing In Vitro Resistance of Group A Hemolytic Streptococci to Sulfonamides, *Proc. Soc. Exper. Biol. & Med.* 58:130-133, 1945.

organism was said to have a resistance of 5 mg. of sulfadiazine.

A high percentage of cultures of types 19 and 17 streptococci obtained from this center in June were found to be resistant to concentrations of 25 and 125 mg. of sulfadiazine, but types other than these two, with an

TABLE 1.—Comparison of Streptococcal Infections Expressed as Annual Rate per Thousand in Camp Hill in January and March 1944

	January	March
Tonsillitis and pharyngitis.....	33	112
Scarlet fever.....	23	93
Rheumatic fever.....	3	15
Admission with positive culture ..	130	494

* This figure represents the admission rate of patients with any type of respiratory illness who had positive throat cultures for beta hemolytic streptococci.

occasional exception of type 3, did not have this ability and were not sulfonamide resistant. This fact gave direct laboratory evidence that sulfonamide resistance had appeared in two types of streptococci, 17 and 19, and supported the hypothesis that the predominance of the latter type and the occurrence of streptococcal disease in recruits taking sulfadiazine was due to the appearance of a sulfadiazine resistant strain of streptococcus. By June, the time at which the resistance tests were first done, type 17 was more common than it had been earlier, and later this type became more and more frequent (chart 1). Unfortunately, practically no strains isolated prior to June had been preserved. It seemed probable, nevertheless, that resistant strains of type 19 first became predominant during March and April and that similar resistant strains of type 17 become common subsequently.

That this was the first known appearance of strongly sulfadiazine resistant strains of beta hemolytic streptococci, at least in any numbers, was supported by the following additional facts:

1. This was the first time at this center or in any other naval activity where sulfadiazine prophylaxis had proved ineffective in controlling streptococcal infection.

TABLE 2.—Comparison of the Sulfadiazine Resistance of Beta Hemolytic Streptococci at a Naval Activity in the Northwest with Three Stations in the East, Middle West and South, Summer of 1944

	Resistance in Milligrams per 1,000 Cc.	Three Stations in East, Middle West and South		Station in Northwest	
		Number Tested	%	Number Tested	%
Type 17	0	43	94	12	9
	1	1	2	4	3
	5	2	4	17	12
	25	0	0	74	52
	125	0	0	34	24
Total.....		46	100	141	100
Type 19	0	60	87	11	5
	1	4	6	24	12
	5	5	7	41	20
	25	0	0	115	65
	125	0	0	17	8
Total.....		69	100	208	100

2. One strain of type 17 and one of type 19 preserved from December 1943 at this same activity were not strongly sulfadiazine resistant. The type 17 showed a resistance to 5 mg. of sulfadiazine and the type 19 no resistance.

3. Of six strains of type 19 and five of type 17 streptococci preserved from Mrs. Lancefield's collection from the presulfonamide era, none were resistant.

4. Strains obtained during the summer of 1944 from other naval activities in the East, Middle West and Southwest, who received few men from this center but where sulfonamide prophylaxis had been carried out during the previous season, revealed no strongly resistant strains of streptococci (table 2).

In June and July the general sulfadiazine prophylactic program was discontinued. Four recruit camps, however, were continued on 0.5 Gm. doses of sulfadiazine given for a part of the training period. Although these studies were inconclusive as the result of lax administration of the tablets, there seemed to be some evidence that even at this time 0.5 Gm. doses of sulfadiazine had some, but slight, value in preventing streptococcal infection.

The streptococcal disease rate remained high through July, and, since so little was known of the role of sulfonamide resistant strains of beta hemolytic streptococci and their relationship to sulfadiazine prophylaxis in various doses, it was decided to continue studies despite the known presence of sulfonamide fast strains. Two camps, Waldron and Peterson, which for the period April through July had the highest overall streptococcal disease rates (table 3) were selected for continued prophylaxis, whereas the remaining three camps were to get no prophylaxis.

TABLE 3.—Comparison of Streptococcal Disease Rates in Five Recruit Camps from April to July Inclusive, Expressed as Annual Rate per Thousand

	Tonsillitis-Pharyngitis	Scarlet Fever	Combined
Waldron.....(A)	182	86	268
Ward.....(B)	82	93	180
Jennison.....(C)	98	74	172
Hill.....(D)	136	90	226
Peterson.....(E)	197	101	298

Accordingly, in these two camps the even numbered companies were given 1.0 Gm. and the odd numbered companies 0.5 Gm. of sulfadiazine daily, starting August 7. An addition in personnel to the Epidemiology Unit made it possible to supervise the administration of the tablets, and within a short time compliance was practically perfect.

Approximately coincident with the administration of sulfadiazine in these two camps there was a rise in practically all types of respiratory illness throughout the center. In some areas the upward trend was apparent before the sulfadiazine was started, but in all areas, whether sulfadiazine was administered or not, there was an obvious increase in streptococcal infection, both absolute and relative in either August or September, which continued into October (charts 2, 3 and 4).

During August the two camps on sulfadiazine had the highest absolute attack rates for scarlet fever and tonsillitis-pharyngitis of any recruit areas. Furthermore, the admission rate of patients with positive throat cultures for hemolytic streptococci was also highest in these two camps. This high rate was maintained through September and most of October (left half of charts 2, 3 and 4). The relative increase in these diseases over that of July in the camps getting sulfadiazine compared with those not getting it was, however, neither as well defined nor as consistent as the absolute increase (right half of charts 2, 3 and 4). The most striking difference between the treated and untreated camps was the much higher rate of scarlet fever in the treated groups.

This was a complete reversal of the experience early in the program prior to the appearance of sulfadiazine resistant strains. Furthermore, there seemed to be no significant difference between the 0.5 and the 1.0 Gm. doses of prophylactic sulfadiazine in preventing strepto-

In the presence of this outbreak it seemed imperative to answer two questions:

1. If the blood level of sulfadiazine is increased by giving 1.5 Gm. of sulfadiazine daily, will sulfadiazine still fail as a prophylactic measure?

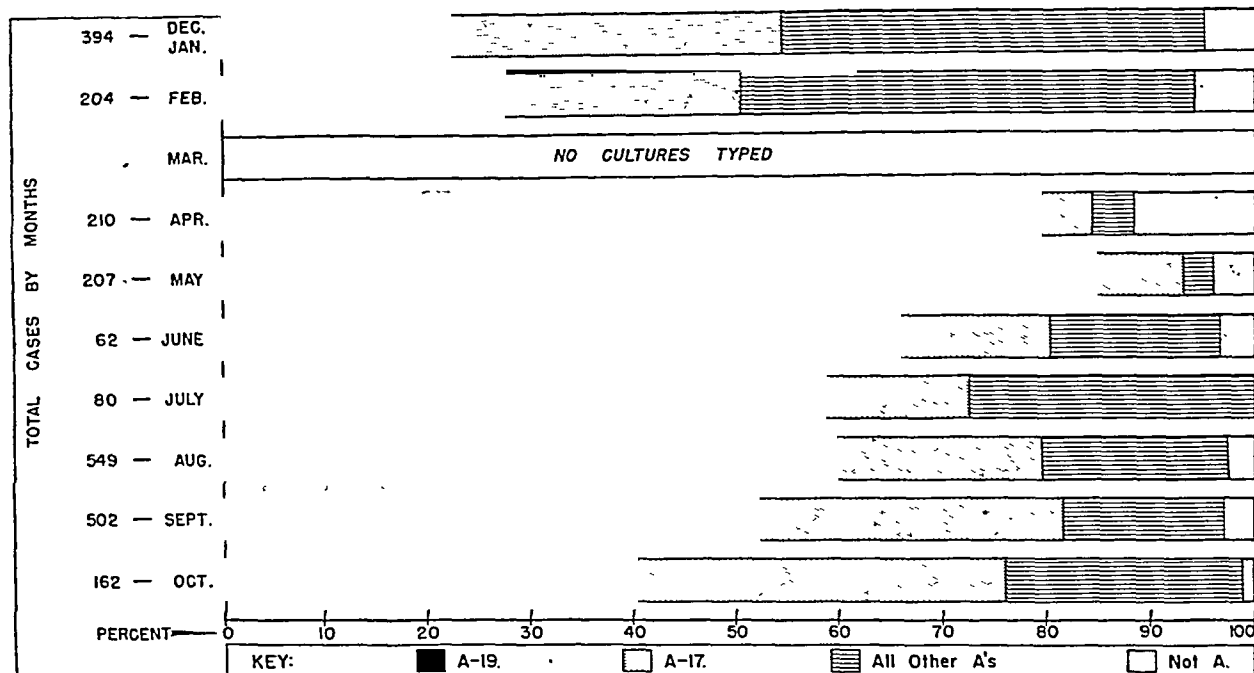


Chart 1—Distribution of types of hemolytic streptococci, 1944.

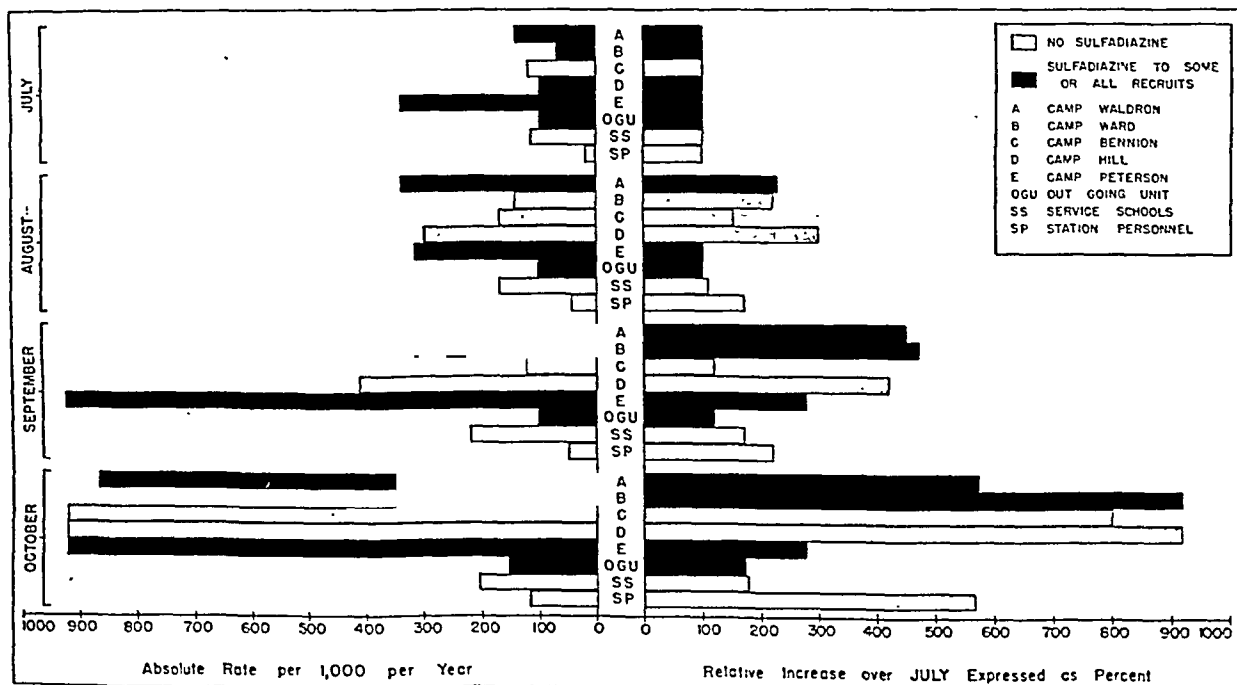


Chart 2.—Tonsillitis and pharyngitis, 1944.

coccic disease, neither dose having prophylactic value. In addition there was some suggestion from the high rates for scarlet fever in Camps Waldron and Peterson, compared with the lower rates in the untreated camps, that this dose might enhance the ability of the streptococcus to attack individuals getting the sulfadiazine.

2. If it does fail is there any evidence that the sulfadiazine at this dosage level increases the likelihood of acquiring streptococcic disease?

The camps used in attempting to answer these questions were Waldron, Peterson and Ward. The recruits in the first two of these camps had been receiving

sulfadiazine prophylaxis during August, as already mentioned, while in the third camp no sulfadiazine had been given for over a month. Waldron and Peterson had the highest streptococcus disease rates during August and Camp Ward the lowest rate. In each camp

due to camp age, location of barracks and similar variables. The administration was supervised carefully, and the men received the drug as ordered from September 13 until October 8, except in Camp Peterson, where the drug was discontinued on October 4. Three companies

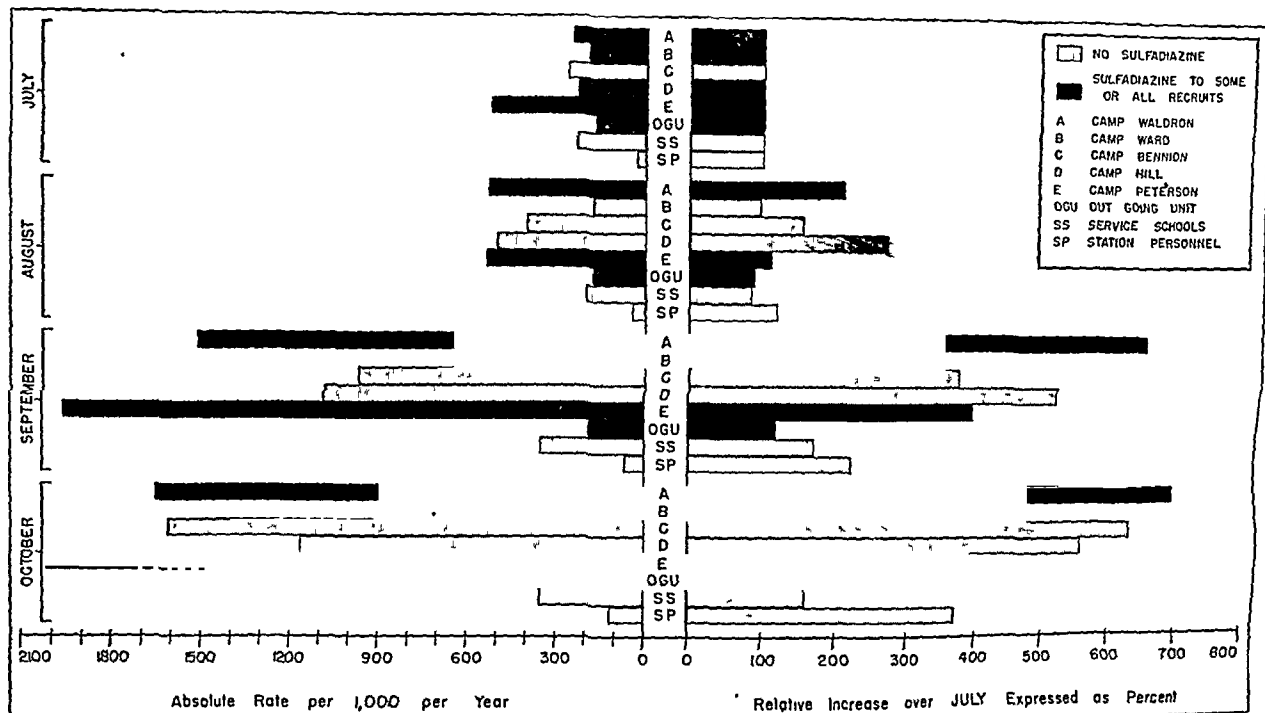


Chart 3—Scarlet fever, 1944

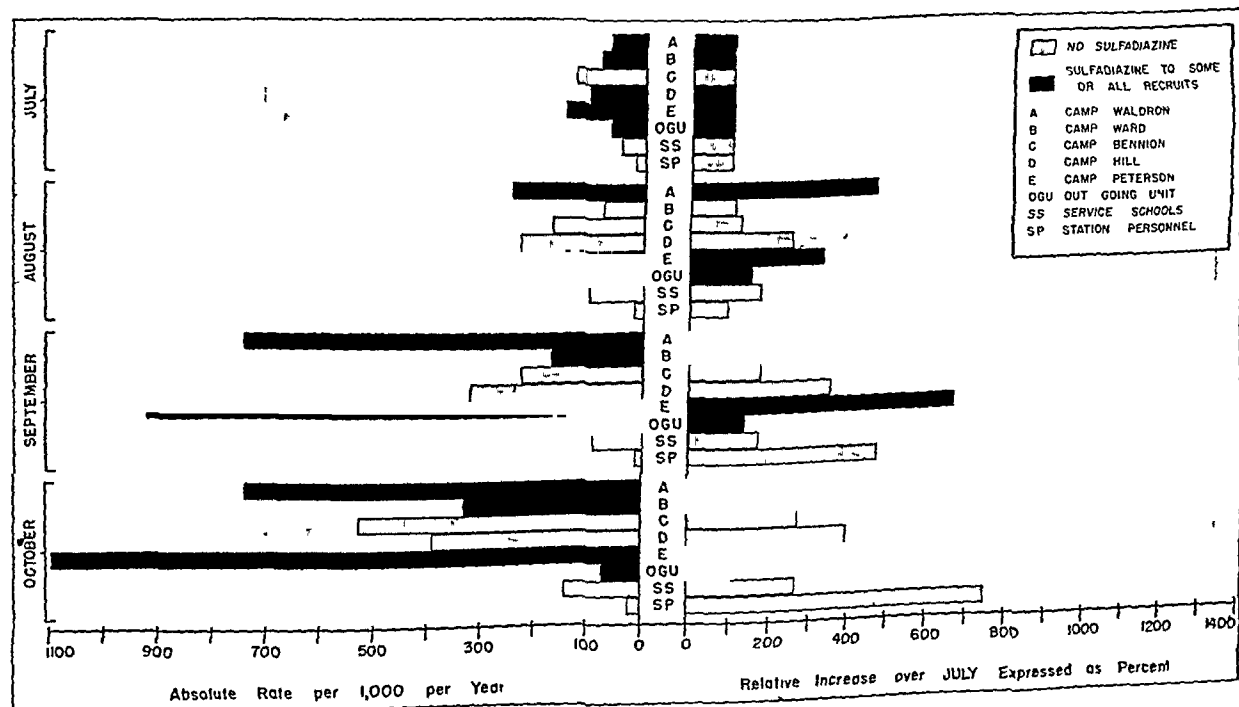


Chart 4—Positive streptococci, 1944

the recruits in the odd numbered companies received no sulfadiazine, whereas those in the even numbered companies received 1.5 Gm. of the drug daily. Since odd and even numbered companies were admitted alternately into each recruit area, this was felt to give the best possible experimental pattern, eliminating bias

in Camp Waldron developed cases of diphtheria and streptococcal disease concomitantly during this period and were excluded from the study.

Despite the larger dose of sulfonamide, the outbreak continued in the treated individuals as well as in the controls. Clinical analysis of the blood of recruits receiv-

ing 1.5 Gm. of sulfadiazine indicated that in the majority of these men levels of at least 2 mg. per hundred cubic centimeters were reached daily. Furthermore, the three companies that had both diphtheria and streptococcal disease were given 2 Gm. of sulfadiazine daily from September 8 to October 4 inclusive, but despite this increased dose their rate for streptococcal infection was exceedingly high. It therefore became apparent that increasing the dose of sulfadiazine was not effective and that daily doses of 0.5, 1, 1.5 and 2 Gm. all seemed equally useless in controlling streptococcal disease.

The second question, whether, in the presence of sulfadiazine resistant strains, sulfadiazine prophylaxis enhanced the possibility of acquiring streptococcal disease could not be definitely answered. However, the evidence in favor of the stimulating effect of sulfadiazine on streptococcal illness in the presence of these sulfonamide resistant strains was as follows:

1. Concurrent with the institution of consistent administration of sulfadiazine in August, an outbreak of streptococcal infection occurred with a high proportion of cases of scarlet fever.

2. The attack rate for all types of streptococcal infection and particularly scarlet fever was greater in the treated than in the untreated camps at this time.

3. When one half of a camp (even numbered companies) were given 1.5 Gm. of sulfadiazine and the other half (odd numbered companies) received none, more streptococcal disease usually occurred in the companies receiving the sulfadiazine (table 4).

It was shown that these higher rates in the treated companies as a whole were not due to previous differences in illness rates or to a few treated companies with very high rates.

On the other hand, there were a considerable number of facts which prevented any definite conclusions on this enhancing or stimulating effect:

The fact that a streptococcus outbreak occurred when sulfadiazine prophylaxis was being given had little value in proving that the one was influenced by the other, for the following reasons:

(a) In retrospect there was some evidence that the streptococcus rate was beginning to rise in late July and the first week of August before the intensive sulfadiazine program was reinstituted. In the previous summer a similar but smaller rise began at this time of year.

(b) During the summer the training period of recruits had been increased from six to twelve weeks, thus allowing more time for an outbreak in any given company to gain momentum.

(c) During June and July the mean age of recruits had decreased, thus increasing the number of younger and more susceptible recruits.

(d) One of the two dispensaries in each camp had been closed, resulting in greater opportunity for more cross infection at sick call and in the wards.

(e) The rise in streptococcal disease rates was general throughout the camp, whether sulfadiazine prophylaxis was administered or not.

The fact that the rates were higher, particularly for scarlet fever, in the treated camps than in the untreated camps was not too significant, since:

(a) The two camps selected had had the highest streptococcal disease rates for a period of five months of any of the recruit camps and it would be expected

that this circumstance, whatever its cause, would continue under epidemic conditions.

(b) Camps, being relatively isolated from one another, in the face of an outbreak act as individuals, and a conclusion based on 2 treated individuals and 3 controls carries little weight.

It was hoped that, by dividing each camp into two equal and apparently comparable groups and giving one sulfadiazine and the other no sulfadiazine, conclusive evidence could be obtained indicating whether the prophylaxis had an enhancing effect on streptococcal disease.

The evidence seemed compatible with this hypothesis but was neither consistent enough nor carried over a

TABLE 4.—Comparison of Streptococcal Illness Rates in Recruits Getting 1.5 Gm. of Sulfadiazine Daily with Those Receiving No Sulfadiazine for Three Week Period During Fall of 1944

Camp		Tonsillitis-Pharyngitis		Scarlet Fever		Total Admitted with Positive Cultures	
		1.5 Gm. Sulfadiazine	No Sulfadiazine	1.5 Gm. Sulfadiazine	No Sulfadiazine	1.5 Gm. Sulfadiazine	No Sulfadiazine
Waldron	Cases	79	46	80	69	171	119
	Rate*	<u>893</u>	<u>497</u>	<u>905</u>	<u>745</u>	<u>1,945</u>	<u>1,290</u>
Ward	Cases	53	39	40	21	111	75
	Rate*	<u>565</u>	<u>336</u>	<u>399</u>	<u>151</u>	<u>1,085</u>	<u>649</u>
Peterson	Cases	57	53	36	36	159	151
	Rate*	<u>751</u>	<u>813</u>	<u>1,266</u>	<u>890</u>	<u>2,100</u>	<u>2,310</u>
Total	Cases	194	138	216	146	441	345
	Rate*	<u>727</u>	<u>594</u>	<u>809</u>	<u>533</u>	<u>1,655</u>	<u>1,265</u>

* Annual rate per thousand.

Not underlined, not significant; single underlined, significant at 5 per cent level; double underlined, significant at 1 per cent level.

TABLE 5.—Distribution of Types of Beta Hemolytic Streptococci in Areas Where Sulfonamide Prophylaxis Was Being Used or Had Been Recently Used Compared with Areas Where No Sulfonamide Had Been Used Recently

	Received Sulfadiazine		Received No Sulfadiazine	
	Number Typed	% of Total	Number Typed	% of Total
A19.....	233	57.1	78	49.2
A17.....	142	34.8	34	15.0
A3.....	14	3.4	25	12.8
A1.....	1	0.2	14	7.4
A2.....	9	2.2	10	5.3
Other A's.....	2	0.5	24	12.7
Not A.....	7	1.7	6	2.6
Total.....	408	99.9	189	100.0

* Group A could not be typed.

long enough period of time to be conclusive. Although the rates for tonsillitis-pharyngitis, scarlet fever and total admissions of patients with positive throat cultures for hemolytic streptococci was greater in the treated groups than in the untreated groups when the figures for the three camps were combined, there was a lack of consistency in the results when the figures for the three camps were considered individually. Although in each camp the scarlet fever rate was higher in the treated group than in the untreated group, in Camp Peterson the tonsillitis-pharyngitis and total patients admitted with positive cultures for beta hemolytic streptococci was higher, although not significantly, in the untreated companies than in the treated companies (table 4).

In the presence of both nonresistant and sulfonamide resistant strains, it would be expected that sulfadiazine prophylaxis would tend to inhibit the nonresistant strains and not have the same effect on the resistant strains. The resulting effect would be that, as in Camp Hill in April, the resistant strains would become predominant and the nonresistant strains would disappear. This was confirmed by the fact that not only were the types which developed pronounced resistance (types 17 and 19) more common in areas where sulfonamide was used (table 5) but that the proportion of resistant strains of types 17 and 19 were also more common in these areas (table 6) than in the untreated areas.

It would also be expected that resistance would be most likely to appear in the more widespread and

TABLE 6.—Comparison of Resistance to Sulfadiazine of Types 17 and 19 Hemolytic Streptococci in Areas Where Prophylaxis Was Used and Where It Had Not Been Used Recently

Resistance in Mg per 100 Ce	Sulfadiazine Used		No Sulfadiazine Used	
	Number Tested	%	Number Tested	%
0. . .	0	0	12	20.7
1.	1	3.2	4	6.9
5	10	16.6	13	22.4
25	78	83.0	28	48.2
125	3	3.2	1	1.7
Total	91	100.0	58	99.9

TABLE 7.—Distribution of Sulfadiazine Resistant Strains of Streptococci in Three Naval Activities on the West Coast During Summer of 1944

Resistance in Mg per 100 Ce	Type 17		Type 19	
	Number Tested	%	Number Tested	%
0	1	11	2	7
1	0	0	5	18
5	0	0	9	32
25	6	67	9	32
125	2	22	3	11
Total	9	100	28	100

therefore presumably more communicable types. This seemed true since types 17 and 19 had been, at the beginning of the sulfadiazine program, most frequently found, whereas type 3, which had shown some evidence of resistance, had been next most common. Additional evidence that these types which showed sulfadiazine resistance were also quite communicable was found in the fact that during the summer of 1944 several other naval activities on the West Coast that received trainees from our center regularly had evidence of infection with these same sulfadiazine resistant strains (table 7). Other camps that received few trainees from our center had little evidence of infection with these resistant strains (table 2).

In addition, these three types in which resistance appeared were characterized by their ability to form erythrogenic toxin. This ability was, however, apparently independent of whether they were resistant or not, as evidenced by the fact that types 17, 19 and 3

before resistance could be demonstrated had shown more tendency to cause scarlet fever than any other type present at the center. Thus, in January and February of 1944, 45 per cent of the most common respiratory infections (catarrhal fever, tonsillitis-pharyngitis and scarlet fever) caused by type 3, 46 per cent caused by type 17 and 26 per cent caused by type 19 were scarlet fever. Furthermore, with the appearance of resistance to sulfadiazine, this ability to cause scarlet fever decreased slightly in type 17 but increased in type 19. Thus, in August and September, when most type 17 and type 19 organisms were resistant, 34 per cent of the common respiratory infections caused by type 17 and 42 per cent of those due to type 19 were scarlet fever.

It was therefore clear that the strains of types 17 and 19 which caused trouble in August and September had three apparently independent attributes in common—they were sulfadiazine resistant not only to prophylactic but, according to the medical officers at the hospital, to therapeutic dosage as well, they were highly communicable and they formed erythrogenic toxin. They also had the additional attributes of being able to invade tissue giving rise to suppurative lesions, and the ability to cause rheumatic fever. Whether these last two characteristics were greater in the sulfonamide resistant strains than they were in the nonresistant strains is not known.

COMMENT

From the experience in the initial months of the sulfadiazine prophylaxis program there seemed no doubt that this measure was effective in controlling streptococcal disease in the presence of sulfadiazine sensitive strains. Later it became equally clear that, in the presence of sulfadiazine resistant strains, prophylaxis with sulfadiazine was of no value and was possibly injurious.

This center was the first place, to our knowledge, where clinically important sulfadiazine resistant strains of beta hemolytic streptococci appeared. It had, at the onset of the sulfadiazine program, an exceedingly high rate of streptococcal disease—much higher than any other comparable training center. With the original high infection rate, the continuous influx of new strains and the thousands of generations of streptococci in a changing population, the possibilities of having a rare resistant strain brought in, or a mutation in the direction of resistance occur in the strains already present were great.

Under conditions of mass sulfadiazine prophylaxis or treatment, Darwin's phenomenon of "survival of the fittest" would tend to eliminate the less resistant strains. The result would be, as we found originally in Camp Hill and later in the center as a whole, that the resistant strains would become predominant, provided they also had the potentiality of high communicability. In this military camp, where new susceptibles were introduced continuously and were given prophylaxis the biologic result was therefore the relative increase in the number of strains that were both sulfonamide resistant and highly communicable. These strains formed incidentally, potent erythrogenic toxin, thus giving rise to a higher proportion of cases of scarlet fever to total streptococcal disease than earlier in the year (36 per cent in September 1944, compared with 22 per cent in January 1944).

Whether in the presence of sulfadiazine resistant strains prophylaxis tends to increase streptococcal infec-

tions is, on the basis of our experience, impossible to answer. We have shown that the two highly resistant strains of types 17 and 19, as well as the less resistant type 3, had, even before the appearance of resistance, been more likely to cause scarlet fever than the other types of streptococci which were present at the center. Since the sulfadiazine prophylaxis inhibited the non-resistant types, which at this center were less likely to cause scarlet fever, an outbreak occurring in a regimental area or camp where prophylaxis is given would be characterized by a higher proportion of cases of scarlet fever than in an area where an equal amount of streptococcal infection occurred as the result of a combination of resistant and nonresistant strains. This might explain the apparently higher rate of scarlet fever in treated groups. It does not, however, account for the apparently higher attack rate for total streptococcal disease in a group getting sulfadiazine than in a control group not getting the drug, a condition which occurred in two of the three camps included in the study in late September and early October. If these differences were real and not the result of some chance or systematic error of unknown nature, these phenomena might be explained in a number of ways. Among these theories one could suggest:

1. That the sulfadiazine resistant strains had so altered their enzyme systems that sulfadiazine in small concentrations in the host acted as an added growth factor or a catalytic agent.

2. That sulfadiazine inhibits certain organisms in the throat which normally compete with the streptococcus for food requirements or produce substances which have an antibiotic effect on the beta hemolytic streptococcus.

But, leaving theories to explain unproved observations aside, the fact remains that the appearance of sulfadiazine resistant strains of beta hemolytic streptococci completely sabotaged an effective means of control of respiratory infections at this center.

SUMMARY

After approximately three months of successful sulfadiazine prophylaxis of respiratory infections at a large naval training center, the effectiveness of this measure became progressively less and eventually a major epidemic of streptococcal disease occurred.

An increase in dosage as high as 2 Gm. daily did not prevent streptococcal diseases, and it was the impression of medical officers at the center that the drug had lost its value therapeutically in these infections.

The loss of prophylactic value of sulfadiazine was originally associated with an absolute and relative increase in the frequency of group A, type 19 infections to the practical exclusion of all other types. Later, group A, type 17 became relatively frequent. These two types were shown by laboratory methods to be sulfonamide resistant *in vitro*.

Other types of streptococci with a few exceptions of type 3 were not sulfonamide resistant.

The proportion of sulfadiazine resistant strains was greater in those recruit camps getting sulfadiazine prophylaxis than in those not getting sulfadiazine.

There was some suggestive evidence but no definite proof that, in the presence of sulfadiazine resistant strains, sulfadiazine prophylaxis tended to increase streptococcal infection, particularly scarlet fever.

THE DEVELOPMENT AND USE OF ALPHA-NAPHTHYL THIOUREA (ANTU) AS A RAT POISON

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During the past three years an investigation has been carried on in this laboratory with the purpose of finding and developing a new rat poison. The best poison so found, alpha-naphthyl thiourea (ANTU), has been proved through extensive laboratory tests and also by controlled field trials in a large city to be an effective and specific poison for the Norway rat, a very common and destructive rat throughout the world.

Since secrecy restrictions on this work have now been lifted and the Office of Scientific Research and Development has given permission for the manufacture and release of alpha-naphthyl thiourea to the public, it seems advisable to present an account of the development of this poison together with effective ways of using it, its toxicity to animals other than rats and procedures to be followed in case of accidental poisoning. The experience gained by large scale field use of alpha-naphthyl thiourea is summarized as a guide to those who have occasion to conduct organized eradication campaigns in the future.

It may be mentioned at this time that, quite apart from rodenticidal uses, alpha-naphthyl thiourea and other thiourea derivatives have proved to be interesting and useful new agents in fields as varied as medicine, biochemistry, physiology and genetics.

Interest in thiourea derivatives as rat poisons arose indirectly from studies on the self selection of diets, which showed rats to be capable of choosing nutritive substances and avoiding harmful ones.¹ This ability to make beneficial dietary selections was found to be lost when taste nerves were sectioned;² accordingly it was concluded that some connection exists between the taste of substances and their nutritional or toxic values.

To test this theory the toxicity of various bitter substances was determined. One very bitter substance which had been considered nontoxic was phenyl thiourea (also known as phenyl thiocarbamide). Since the observation of Fox in 1931 that, while this compound tasted very bitter to most people there were some who could not taste it at all,³ phenyl thiourea had been widely used for research in the fields of genetics and sensory perception. (The inability to taste phenyl thiourea was found⁴ to be inherited as a mendelian recessive.)

Following the usual method of testing taste ability in human beings with phenyl thiourea, we placed a few crystals on the tongues of 6 rats. To our surprise all 6 were found dead the next morning. This observation was followed up by a quantitative determination of the

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This work was done with the collaboration of Miss Nancy Cadwalader, Mrs. K. C. Clisby, Dr. S. H. Dieke, Dr. J. T. Emlen Jr., Dr. James Flexner, Dr. J. B. Frerichs, Dr. W. J. Griffiths Jr. and Mrs. Martha Schaffer.

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2. Richter, C. P.: Tr. Am. Neurol. A., 65th annual meeting, June 1939, p. 49.

3. Fox, A. L.: Proc. Nat. Acad. Sc. 18: 115 (Jan.) 1932.

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toxicity to our stock rats. The median lethal dose was found to be 3 or 4 mg. per kilogram of body weight; in other words phenyl thiourea was quite as toxic to rats as strychnine!

In the course of our work on the toxic effects of phenyl thiourea,⁵ it was found that our laboratory rats regularly ate enough poisoned food to kill themselves when offered with concentrations of phenyl thiourea as low as 1 per cent. It thus appeared that this highly poisonous substance might be accepted well enough to make it useful as a rat poison.

Shortly before the entry of this country into the war it was realized that we were in a very vulnerable position with respect to the control of rats and rat borne epidemics. Red squill, the staple rat poison, was no longer available in adequate amounts because the Axis powers held the sources of supply along the Mediterranean seaboard. Other possible poisons were eliminated by critical requirements or potential hazards in use.

The wide and prolonged use of phenyl thiourea for taste and inheritance tests without any accidents indicated that it probably does not have any toxic action on man. This probability, coupled with its high toxicity to rats, made it seem an excellent candidate as a substitute for red squill. Through the interest of Colonel Perrin Long, at that time chairman of the Committee on Chemotherapeutic and Other Agents of the Division of Medical Sciences of the National Research Council, a grant was given to this laboratory to test phenyl thiourea as a rat poison and also to determine which baits would serve most effectively in its use. The work was begun in January 1942.

FIELD TRIALS AND METHODS OF SYSTEMATIC RAT CONTROL

Preliminary tests with phenyl thiourea on several city dumps and large grocery stores in Baltimore were not satisfactory. Some rats were killed but many survived, as shown by consumption of plain baits offered subsequently. A number of wild rats were therefore trapped, brought into the laboratory and offered phenyl thiourea baits along with unpoisoned food. A definite discrimination against poisoned baits was immediately apparent, and it was concluded that the bitter taste was responsible for the poor results obtained in the field.

A search was accordingly started for a thiourea derivative which would have the same high toxicity as phenyl thiourea without its bitter taste. A request to the E. I. du Pont de Nemours Company for thioureas and related compounds which might possess the desired characteristics brought a prompt and helpful response. Over one hundred samples were sent within a short time. These were screened by administering 100 mg. doses to laboratory rats by stomach tube, followed by progressively lower doses whenever the compound killed the rats. In this way nine compounds were found which possessed toxic values comparable to phenyl thiourea. These were then offered to rats in 1 per cent mixtures with finely ground yellow corn. Of the nine, alpha-naphthyl thiourea (a fine gray insoluble powder with very little odor or taste) was most readily accepted. Further tests in which alpha-naphthyl thiourea poisoned baits were offered to groups of laboratory rats showed

that complete kills were generally obtained, even when unpoisoned food was available at the same time. Laboratory tests were then made with captive wild Norway rats and equally satisfactory results obtained.

Following these encouraging observations, further trials in the field were instituted. Recognizing the inadequacy of individual houses and yards as test areas, it was decided to adopt the city block as a minimum unit for poison treatment. Subsequent observation showed the wisdom of this decision, since the four streets surrounding a block were found to form natural barriers which rats rarely crossed, except under special circumstances, while local movements from yard to yard within a block were common.

During the next three years a number of experimental campaigns were undertaken in different parts of the city of Baltimore, some on a small and others on a large scale. In general the smaller campaigns were directed toward solving problems of technic, such as optimum concentrations of alpha-naphthyl thiourea in bait and most suitable baiting procedures, while the larger ones were aimed more at elucidation of problems dealing with workers and assistance from various civic and social organizations. For the information of those who may want to undertake similar campaigns in other cities, a brief chronologic account is given here of the results obtained in each of these undertakings.

Eight blocks in the city of Baltimore were treated in the first trial. Baits composed of yellow corn meal with 1 per cent alpha-naphthyl thiourea and sections of fresh ears of corn with the grains split and lightly dusted with alpha-naphthyl thiourea were distributed to every house, cellar and yard by Boy Scouts. The results were promising. Large numbers of dead rats were recovered, and inhabitants reported very few survivors.

More extensive tests now seemed to be warranted with a view to working out a plan and method for a citywide campaign. Questions of personnel, poisoning technic, type of bait and precautions for protecting the public were therefore discussed with municipal authorities of Baltimore. An appropriation of \$5,000 was provided by the city in October 1942 for the hiring of men; the Office of Scientific Research and Development continued to provide the bait and poison.

The Eastern Health District, a densely populated and heavily rat infested area, covering about two hundred blocks around the Johns Hopkins Hospital, was selected for the first large scale test. A crew of men was procured and a standardized bait of finely ground corn with 1 per cent alpha-naphthyl thiourea was decided on. The men worked in pairs distributing the bait in paper cups in the houses, cellars and yards of each block. Dead rats were picked up on the following days, and a house to house survey was made several weeks later to secure reports from the residents on the persistence of rats.

The results obtained were irregular. Some blocks reported very few survivors, others reported many. Up to 100 dead rats were recovered in certain blocks, while in others only a few were found. An investigation of the causes of failure at this time showed that many houses had been missed or hastily treated by unreliable crew members. At least some of the low kills could be attributed to this.

A series of more intensive and careful block campaigns was organized in another section in May 1943, using a group of fifteen young and enthusiastic air raid war-

5. Richter, C. P., and Clisby, Kathryn H.: Toxic Effects of the Bitter Tasting Phenylthiocarbamide. *Arch. Path.* 33: 46 (Jan.) 1942.

dens as volunteer workers. Preparations included the distribution of typewritten notices and the initiation of a general clean-up campaign culminating in a special garbage collection immediately preceding the poisoning.

This time alpha-naphthyl thiourea was used in three types of bait: it was dusted over diced apples and sweet potatoes, offered in spoonful piles of a 1 per cent mixture with cornmeal, and put out in protected places (inaccessible to children and pets) as a suspension in water. Emphasis was placed on thoroughness, and it was believed that very few rat infested places were missed. Dead rats were collected two days later and all burrows firmly closed on the third and fourth days. More poison baits or traps were promptly set out wherever holes reopened or other fresh rat signs were seen.

Results in this campaign were good. Many dead rats were recovered even where they had not been suspected and very few holes were reopened. Residents and air raid wardens, acting as inspectors, found very few rat signs in this area for many months; a few blocks have remained clear of rats up to the time of this writing, two and one-half years later, as determined from reports and from surveys conducted by trained men.

The good kill obtained in all of these blocks and the outstanding success obtained in a few indicated that satisfactory results were attainable with alpha-naphthyl thiourea as a field rodenticide. The thoroughness of distribution, the use of several alternate baits and the preliminary clean-up were all considered to have contributed materially to the success of the campaign.

A more extensive experimental program was next set up under city appropriations of \$55,000⁶ which provided for a centrally located rodent control office with a director, office help, field workers, a health inspector and technical assistants for an eighteen month period. New blocks were treated following the pattern set in earlier tests but with several added features. Printed notice cards were prepared and large posters of two types were made to be placed in conspicuous parts of the blocks; one type, printed in red, announced the campaign for the block; a second, in black, which was substituted for the red poster after the campaign had been completed, reported that the job had been done and requested residents to communicate any recurrence of rats to their block inspector, whose name and address appeared at the bottom. Special attention was also given to the reappearance of rats in previously treated blocks. For this purpose a force of volunteer block inspectors was organized. Each inspector was asked to make a monthly door to door canvass of his or her block and submit a report on sites of persisting or reappearing trouble. A field crew was then dispatched to the scene to distribute poison, set traps or fumigate burrows with cyanogas dust.

In all about 1,360 city blocks were treated with alpha-naphthyl thiourea during this eighteen month period. The results in general were fairly good although still far from perfect: in most blocks the kill was about 90 per cent, based on estimates of total rat populations obtained in intensive trapping campaigns.

Budget limitations and the wartime scarcity of capable field workers demonstrated that any expansion of

the program during 1945 would have to depend on volunteer participation. Experience had shown furthermore that there were many advantages to be gained by the continuous personal attentions which could be devoted to a block by its interested residents. A system of volunteer workers was accordingly organized and a new twelve month budget of \$49,000 was appropriated by the city for office personnel, a limited field force and the purchase of grain bait; alpha-naphthyl thiourea was again furnished by the Office of Scientific Research and Development in return for reports on results.

At the present time, up to Aug. 1, 1945, over 1,500 citizens have volunteered to do the work of treating and repeatedly checking for rats in their home blocks and have been given detailed instructions and baiting materials by the City Rodent Control Office. They have, to date, treated and placed under their permanent supervision about 2,830 blocks comprising about three fourths of the heavily populated portion of the city. An effective procedure has been developed by which volunteer workers can be recruited, organized, instructed and put to work through circulars and petition forms distributed by the Rodent Control Office and through talks and field demonstrations by trained city employees.

At present, alpha-naphthyl thiourea is being effectively used in five different ways: (1) in a mixture (2 to 5 per cent) with finely ground grain such as corn or wheat, (2) as a spray or dust on ground grain or on fruit or vegetables such as diced apples, sweet potatoes or tomatoes, (3) as a dust in pure form or mixed half and half with flour, to be placed on floors and runways, (4) as a dust on the surface of water and (5) as a dust blown into the burrows and holes with a standard cyanogas dust pump.

At no time in the course of this rather extensive field trial have toxic symptoms attributable to alpha-naphthyl thiourea been observed in the workers or in the more than 500,000 residents of Baltimore who have come in contact either with the poison as such or with poisoned baits, and this despite what at times was undoubtedly very casual handling. Some dogs have, however, been accidentally killed. When alpha-naphthyl thiourea was administered in food to dogs under laboratory conditions a number were observed to vomit and so rid themselves of the poison. Retching has also been observed in dogs after intravenous administration of alpha-naphthyl thiourea; so it may be assumed that alpha-naphthyl thiourea has an emetic quality which would protect dogs under favorable conditions but not rats, since rats are not able to vomit.

There is doubtless still much to be learned on the effective use of alpha-naphthyl thiourea as a rodenticide, but we believe, on the basis of experiences described in this report, that procedures have been developed by which in an emergency the rat population of a city could be brought under control in a very short time.

LABORATORY OBSERVATIONS

Parallel to trials in the field, intensive studies were carried out in the laboratory. Some of these were directed toward the development of specifications for the product while the rest involved testing of various baits, comparison of alpha-naphthyl thiourea with other poisons and investigating the mechanism of action with a view to developing an antidote.

Of special importance, particularly during wartime, is the fact that the manufacture of alpha-naphthyl

6. The appropriations were made largely through the efforts of Mayor Howard B. Jackson and Mayor Theodore McKeldin and Dr. Huntington Williams, the commissioner of health.

thiourea does not involve any expensive materials or any of those on the critical list.

It has been found that the effectiveness of alpha-naphthyl thiourea depends to some extent on particle size: an average diameter of 5 to 10 microns has proved best for dusting work, while a larger size, approximately 100 microns, gives best results in food mixtures.

Alpha-naphthyl thiourea is very stable and does not deteriorate on prolonged storage. Because of its high melting point, 184 C., it is unaffected by temperatures well above those normally encountered. It is also practically insoluble in most liquids. Its solubility in water is somewhat higher in the presence of alkalis than in neutral or acid solutions but is still only a few milligrams per hundred cubic centimeters.

The bioassays and other tests were performed in large part with trapped wild rats provided by the city in partial return for the poison supplied by the Office of Scientific Research and Development. Special methods were developed for handling and housing large numbers of wild rats. An effective device was worked out for handling these rats without anesthesia,⁷ by means of which wild rats taken from the streets could be removed from their cages, weighed, injected or tube fed and then returned to their cages at the rate of 20 or 30 per hour; this is only slightly longer than would be required to carry out the same operations on tame rats.

Large cylindric metal pens 10 feet in diameter and 4 feet high were constructed for use in observing the reactions of rats to various baits, poisoned and unpoisoned, in which the effectiveness of alpha-naphthyl thiourea and other poisons could be studied under controlled conditions. The results obtained in these pens on the voluntary acceptance by wild rats of various poison baits have proved fundamental to our work and have disclosed a number of previously unsuspected facts about the eating habits and general behavior of wild rats. In these pens we have found that alpha-naphthyl thiourea bait is eaten without hesitation by the rats, even in concentrations as high as 20 per cent; it has also been observed that the voluntary acceptance of alpha-naphthyl thiourea compares very favorably with other standard rodenticides.

Comparisons were made between the toxicity of alpha-naphthyl thiourea and other poisons that have been or are being used to exterminate rats. The poisons were administered to wild Norway rats by stomach tube. Alpha-naphthyl thiourea at an LD₅₀ level of 7 mg. per kilogram was found to compare favorably with thallium sulfate at 16, zinc phosphide at 40, arsenic trioxide at 140, fortified red squill at 150 to 300 and barium carbonate at 1,500 mg. per kilogram of body weight. It is not so toxic to rats as 1080, the new rodenticide recently announced by the Fish and Wildlife Service,⁸ but it has a much higher safety factor, because 1080 is much more toxic to all other animals, including man.

A number of experiments have been made on the toxicity of alpha-naphthyl thiourea to other animals. Only the Norway rat, the mouse and the dog were killed by doses less than 100 mg. per kilogram of body weight. The Alexandrine rat, the squirrel and the guinea pig required doses between 100 and 400 mg. per kilogram to succumb, while monkeys, rabbits and chickens were even more resistant: 5 Gm. per kilo-

gram was required to kill 100 per cent of groups of chickens and monkeys.

A most interesting, but in some ways very disappointing, finding was that alpha-naphthyl thiourea does not have the same high toxicity for the Alexandrine or black rat, a common species of rat in many parts of the world but rarely found in Baltimore. It would appear that in general alpha-naphthyl thiourea is more effective on carnivorous than on herbivorous animals. In this connection may be mentioned the great differences in the toxicity of the parent compound thiourea which we have recently observed in three strains of Norway rats belonging to the same species but living on different diets.⁹ With an LD₅₀ of 4 mg. per kilogram for our stock of domestic rats, the value for another domestic colony was found to be 640 while for wild rats from the field it was 1,830 mg. per kilogram. When all three strains were fed our stock diet for extended periods of time, however, these differences in susceptibility were almost if not completely overcome and the same low LD₅₀ value was approached by the two more resistant strains.

Since it had been observed that tolerance to phenyl thiourea could be built up in laboratory rats,⁵ studies were initiated to investigate the same phenomenon with alpha-naphthyl thiourea and wild rats. It was found that wild rats develop a tolerance to alpha-naphthyl thiourea quite readily; in fact, some of our experiments indicate the existence of some degree of tolerance as early as two or three hours after ingestion. This tolerance disappears completely, however, in thirty to forty days after discontinuance of the poison. The basis for the development of tolerance in the wild Norway rat and the relation to the natural tolerance in the Alexandrine rat and in the other herbivorous animals has not been determined. It has been found, however, that young wild Norway rats, that is, below the age of puberty, have up to seven times as much natural resistance as is found in the same rats when they are mature.

Extensive experiments were undertaken on the mechanism of action and pathology of alpha-naphthyl thiourea, in part to work out an antidote and in part to determine whether information could be obtained to make the compound even more effective and possibly to discover new and more effective thioureas. From experiments that have been carried out on Norway rats and on dogs it is clear that in these two species death is due to the development of a drowning pulmonary edema. This edema results from a greatly increased permeability of the lung capillaries and possibly also from some slight damage to the lung capillaries. Neither the heart nor any other organ appears to be affected. The amount of the fluid which permeates the capillary walls and the speed with which it goes through the walls after the administration of the poison was beautifully demonstrated by experiments on dogs carried out by Dr. Cecil Drinker, who observed the lymph flow from the lungs and heart.¹⁰ The flow of lymph began to increase within slightly more than ninety minutes after alpha-naphthyl thiourea was injected into the dog's vein and continued to increase at a rapid rate until at the end of eight hours it attained a level eighty times higher than

9. Dieke, S. H., and Richter, C. P.: *J. Pharmacol. & Exper. Therap.* 83: 195 (March) 1945.

10. Drinker, C. K.: *Pulmonary Edema and Inflammation*. Harvard University Press, 1945, pp. 39-43.

7. Emilen, J. T., Jr.: *J. Wildlife Management* 8: 264 (July) 1944.
8. Kalmbach, E. R.: *Science* 102: 232 (Aug. 31) 1945.

that present before the administration of alpha-naphthyl thiourea. Dr. Drinker stated that in all his studies of lymphatic flow he had never seen anything to compare with it.

The mechanism involved in this increased permeability of the capillary membranes has not been determined. It is possible that alpha-naphthyl thiourea acts adversely on some enzyme system. The antioxidant action, which may be a property of alpha-naphthyl thiourea as well as of phenyl thiourea and thiourea, could also play a part. It is possible that alpha-naphthyl thiourea may act on some amino acids in the body, particularly cystine, since experiments in this laboratory have shown that, while small amounts of alpha-naphthyl thiourea administered chronically cause cessation of hair growth, this effect is counteracted by feeding suitable amounts of cystine.

The factors involved in the absorption of alpha-naphthyl thiourea in the body remain unknown. Despite its very low solubility in water alpha-naphthyl thiourea seems to be fairly rapidly absorbed in the body whether introduced orally or parenterally. The toxicity of alpha-naphthyl thiourea depends to a certain extent on the rate of absorption: the more rapidly it is absorbed, the more certain the animal is to die.

Thus in case of accidental or intentional human poisoning with alpha-naphthyl thiourea we recommend first of all immediate stomach lavage, secondly administration of oxygen possibly under increased pressure and thirdly the avoidance of fluids, particularly alkaline fluids. It may also be wise to avoid fats, since some of our evidence indicates that alpha-naphthyl thiourea may be more readily absorbed in their presence.

At this point attention may be drawn briefly to certain aspects of the chronic action of alpha-naphthyl thiourea, phenyl thiourea, and also of thiourea, which are of general physiologic interest quite apart from their relation to the problem of killing rats. All three drugs produce hyperplasia of the thyroid gland. This hyperactive condition of the gland apparently results from interference with the production of thyroid hormone. Mainly through the efforts of Dr. E. B. Astwood thiourea and more recently the closely related compound 2-thiouracil have come to be widely used clinically in the treatment of hyperthyroidism.¹¹ For this purpose it is obvious that the less toxic the thiourea derivative the greater advantage it has.

All the mono substituted thiourea derivatives we have tested produced pulmonary edema and pleural effusion in the laboratory rat. Apparently an inverse relationship exists between the pulmonary edema and the effusion, since we have observed that the edema is greatest during the first few hours after the poisoning and at a time when there is little pleural effusion. The longer the animals survive, the greater the effusion becomes and the less pronounced is the edema. It is interesting to note that administration of these thioureas to rats is followed within two hours by a definite and persistent lowering of body temperature; values below 94 F. are regularly observed.

The effects produced by the thioureas on the pigmentation of the skin and hair and on hair growth in black Norway rats are also very interesting. It has been observed in this laboratory that, while in nonlethal con-

centrations thiourea has little or no effect either on pigmentation or on hair growth, phenyl thiourea definitely destroys the pigment both in the skin and in the hair without affecting hair growth while alpha-naphthyl thiourea completely stops both pigment production and hair growth. Withdrawal of phenyl thiourea is followed in less than ten days by greatly increased pigment production, and similarly cessation of alpha-naphthyl thiourea treatment is followed by renewed pigment production and hair growth. These observations open up a wide field of investigation of the action of the compounds on enzyme systems and also on dietary constituents.

SUMMARY

A new rat poison, alpha-naphthyl thiourea (abbreviated ANTU) has been discovered which compares very favorably with other rodenticides at present available as to cost, toxicity and voluntary acceptance by rats.

It is a relatively specific poison for Norway rats, being less toxic to all other species tested. Its emetic property protects dogs in most cases. No human fatalities or toxic symptoms in human beings have been observed during three years of extensive use in a city.

Experience gained from large scale municipal rat control campaigns, using alpha-naphthyl thiourea as the exclusive poison, indicates that observance of the following points is essential to success: 1. Poisoning should not be attempted in any area smaller than a whole city block at a time. 2. The coverage with poisoned bait must be scrupulously complete throughout the block. 3. The cooperation of residents is essential to the permanent control which must follow any intensive campaign. With suitable publicity, materials and cooperation the rat population of a large city can be substantially reduced in a short time should circumstances require it.

Alpha-naphthyl thiourea kills rats and dogs by its action on the capillaries of the lungs, producing drowning pulmonary edema. No antidote is yet available, but the great insolubility of alpha-naphthyl thiourea makes prompt stomach lavage a useful countermeasure. Should pulmonary edema develop following accidental human poisoning, oxygen should be administered but no fluids should be given either by mouth or intravenously.

Furthermore, alpha-naphthyl thiourea provides a valuable new tool for research, both in its acute effects involving so specific a site of action and such a rapid increase in lymph flow, and in its chronic effects, which parallel those obtained with thiourea and 2-thiouracil and in addition include disappearance of pigment and cessation of hair growth in black Norway rats.

Epidemic Typhus.—Epidemic typhus, as it is seen in eastern Europe or North Africa, is a fully established human infection, but there is fairly strong historical evidence that the typical disease has been known in Europe only since the fifteenth century. Zinsser's assumption that the typhus rickettsia is an ancient parasite of the rat and its fleas, and that the murine form is ancestral to the classical type spread from man to man by the louse, is fairly generally accepted. But in these rickettsial diseases we have a complex evolutionary problem in which the part played by the arthropod vector dominates the picture. There are good reasons for believing that the rickettsias are organisms which developed originally as saprophytes or semi-parasites in the gut of the arthropod and were transmitted to the next generation through the egg.—Burnet, Frank MacFarlane: *Virus as Organism*. Cambridge, Mass., Harvard University Press, 1945.

11. Astwood, E. B.: Treatment of Hyperthyroidism with Thiourea and Thiouracil, *J. A. M. A.* 122: 78 (May 8) 1943.

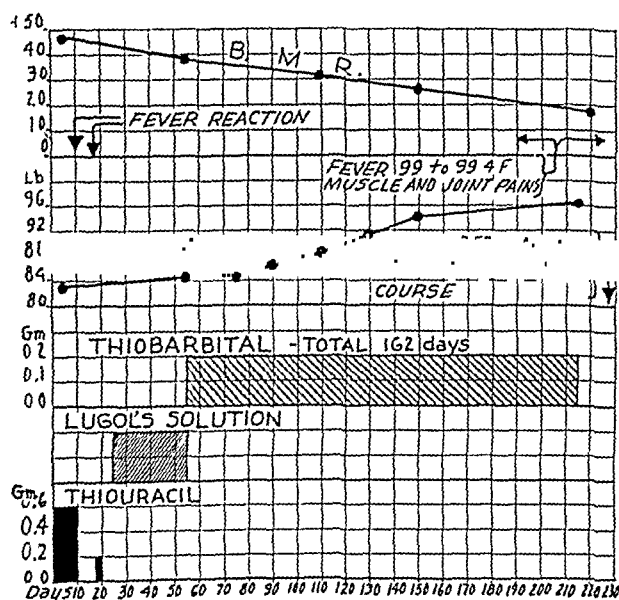
USE OF THIOBARBITAL IN THE TREATMENT OF HYPERTHYROIDISM

ELMER C. BARTELS, M.D.

BOSTON

Astwood¹ has reported that diethyl thiobarbituric acid (thiobarbital) has antithyroid activity similar to that of thiouracil. Experiments on rats showed that thiobarbital in small doses was somewhat more effective in inhibiting thyroid function and perhaps less toxic than thiouracil. In larger doses, however, animals receiving thiobarbital were noted to have fatty infiltration of the liver. Astwood has been using thiobarbital in clinical hyperthyroidism since February 1944 and has made a report on his results.^{1a}

The opportune moment for our initial trial use of thiobarbital came in October 1944 when a patient receiving thiouracil developed a fever reaction necessitating discontinuance of treatment and in whom further antithyroid therapy was thought essential before thyroidectomy. His first patient to receive thiobarbital (chart 1) was an



(Chart 1.—Clinical course of patient sensitive to thiouracil. Patient received thiobarbital until hyperthyroidism was completely controlled.)

extremely fragile woman aged 75 with severe hyperthyroidism of five years' duration due to an adenomatous goiter. She weighed 83 pounds (37.6 Kg.) and had a basal metabolic rate of +46. Preoperative preparation with thiouracil was deemed advisable, so a daily dose of 0.6 Gm. was started. On the tenth day after treatment was begun, fever developed and the medication was stopped. A test dose of 0.1 Gm. of thiouracil was given nine days later, with a characteristic fever reaction indicating definite thiouracil sensitivity. The patient was then given Lugol's solution for one month without clinical improvement. The weight remained stationary and there was no significant drop in the basal metabolic rate. Thiobarbital was then started in the daily dose of 0.2 Gm. There was slow but gratifying improvement during the following one

hundred and sixty-two days. The basal metabolic rate fell to +16, with a gain in weight of 13 pounds (6 Kg.). During the last twenty-five days of treatment the patient had a slight elevation of temperature, with generalized muscle and joint pains. These untoward symptoms slowly subsided after the administration of thiobarbital was discontinued. Thyroidectomy was then done, with

TABLE 1.—Hyperthyroid Patients Receiving Thiobarbital

A	Number of Cases
Thiobarbital subsequent to thiouracil reaction ..	9
Thiobarbital administered initially ..	19
Total ..	28

B	Number of Cases
Thyroidectomy after thiobarbital treatment ..	21
Maintenance treatment ..	7
a Malignant hypertension with primary hyperthyroidism ..	1
b Polycystic kidneys with primary hyperthyroidism ..	1
c Metastatic disease with adenomatous goiter ..	1
d Thyrocardiac patient refusing operation ..	1
e Recurrent primary hyperthyroidism ..	1
Hyperthyroidism controlled—operation refused—thiobarbital discontinued ..	1
Recurrent primary hyperthyroidism—thiobarbital sensitive—thiobarbital discontinued ..	1
Total ..	28

the patient having a satisfactory anesthesia and post-operative course. This first experience with thiobarbital certified that this drug has unquestionable antithyroid action in human beings and that sensitivity to thiouracil does not preclude its use.

Thiobarbital² has now been used at the Lahey Clinic in the treatment of 28 patients (table 1) with hyperthyroidism; 9 patients received thiobarbital subsequent to thiouracil and 19 received thiobarbital initially. Nineteen patients had primary hyperthyroidism and 9 patients adenomatous goiter with hyperthyroidism. Twenty-one patients who had severe hyperthyroidism, 4 being classified as thyrocardiac, were given thiobarbital in a manner similar to our use² of thiouracil preparatory to thyroidectomy. Five patients are on main-

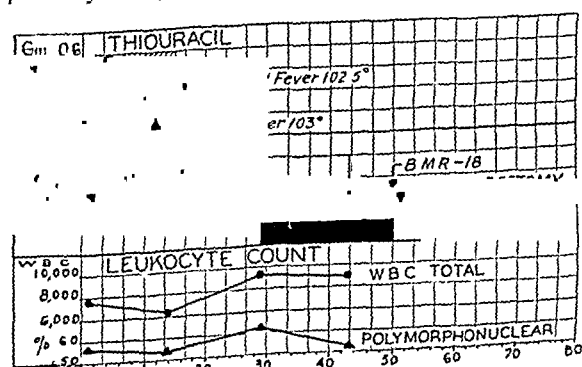


Chart 2.—Fever reaction to thiouracil, with subsequent thiobarbital administration, a man aged 43, with primary hyperthyroidism.

tenance therapy; 1 patient with malignant hypertension and primary hyperthyroidism, 1 patient with polycystic kidneys and uremia with primary hyperthyroidism,

From the Department of Internal Medicine, the Lahey Clinic.
1. Astwood, L. B., Bessell, Adele, and Hughes, A. M.: The Antithyroid Activity of Thiobarbital, *Endocrinol* 26: 72-74 (Jan.) 1945.
2a. Astwood, E. B.: Some observations on the Use of Thiobarbital as an Antithyroid Agent in the Treatment of Graves' Disease, *J. Clin. Endocrinol* 5: 345-352 (Oct.) 1945.

2. Obtained from Dr. George Hazel, Abbott Laboratories, Chicago, and from Dr. L. B. Astwood, Boston.
3. Bartels, E. C.: Thiouracil: Its Use in the Preoperative Management of Severe Hyperthyroidism, *J. A. M. A.* 125: 24-26 (May 6) 1944, Lahey, *Thiouracil in the Preoperative Management of Severe Hyperthyroidism*, *Ann. Int. Med.* 24: 5-10 (Jan.) 1945, *Thiouracil in the Preoperative Management of Severe Hyperthyroidism*, *S. Clin. North Am.* 21: 44-60 (Jan.) 1945.
4. Bartels, E. C.: Thiouracil: Its Use in the Preoperative Management of Severe Hyperthyroidism, *J. A. M. A.* 125: 24-26 (May 6) 1944, Lahey, *Thiouracil in the Preoperative Management of Severe Hyperthyroidism*, *Ann. Int. Med.* 24: 5-10 (Jan.) 1945, *Thiouracil in the Preoperative Management of Severe Hyperthyroidism*, *S. Clin. North Am.* 21: 44-60 (Jan.) 1945.

1 patient with a metastatic mediastinal tumor and primary hyperthyroidism, 1 patient with recurrent primary hyperthyroidism and 1 patient, thyrocardiac with an adenomatous goiter, who refused operation after thiouracil preparation. One patient with severe recurrent primary hyperthyroidism was prepared for operation but refused it, so the medication was discontinued. One patient who was fever sensitive to thiouracil received thiobarbital for only eight days, when fever developed and treatment had to be discontinued.

Thiobarbital has been given to 9 patients who could not tolerate thiouracil because of the development of fever in 6, leukopenia and granulocytopenia in 1, granulocytopenia in 1 and swollen salivary glands in 1. Of the 6 patients in whom fever developed from thiouracil, 3 tolerated the thiobarbital (chart 2) but 1 patient developed both leukopenia and granulocytopenia after eight days of treatment, 1 patient had fever on the eighth day and 1 patient (chart 1) developed a mild fever after prolonged administration. The 2 patients (chart 3) in whom changes in the white blood cells took place and the 1 patient who developed swollen salivary glands (chart 4) from thiouracil were able to tolerate thiobarbital until maximum preoperative treatment was obtained.

Of the 19 patients given thiobarbital as initial therapy, 5 developed toxic reactions. One developed fever on the eighth day and 1 on the twelfth day; the latter patient tolerated a reduced dose of 0.1 Gm. (chart 6) the initial dose being 0.2 Gm. Two patients developed agranulocytosis,⁴ 1 on the fourteenth and the other on the twenty-fifth day of treatment. Moderate leukopenia and granulocytopenia (white blood cells 2,200, polymorphonuclear cells 39 per cent) developed in 1 patient on the twenty-first day. The 2 patients who developed agranulocytosis were treated successfully with penicillin (chart 5). The patient with moderate white cell changes was asymptomatic but she was also given penicillin. The white blood cells returned to normal in eight days. The 4 patients in whom the thiobarbital was stopped received Lugol's solution to complete the preoperative preparation.

Of the total 28 patients (9 patients receiving thiobarbital after thiouracil and 19 receiving thiobarbital initially) 8 (table 2), or 28 per cent, developed toxic symptoms. In 7 patients the treatment was discontinued; 1 patient tolerated a reduced dose. This percentage of reactions from thiobarbital is about three times as great as that which we observed from the administration of thiouracil, with which 23 reactions occurred in 196 patients, or 11 per cent.

The reactions to thiobarbital were found to be just as prevalent on a dose of 0.2 Gm. as on a dose of 0.1 Gm., 4 in each instance. One patient (chart 6), however, was found to tolerate a dose of 0.1 Gm. after fever developed from the 0.2 Gm. dose. Seven patients who received 0.05 Gm. had no toxic manifestations. Further observations of a large series will be necessary to determine whether there is a relation between size of dose and chance of a toxic reaction which was not found with thiouracil when reactions occurred on very small doses. As with thiouracil, no relationship was noted between duration of treatment and onset of reaction. With thiouracil most fever reactions occurred on the ninth to

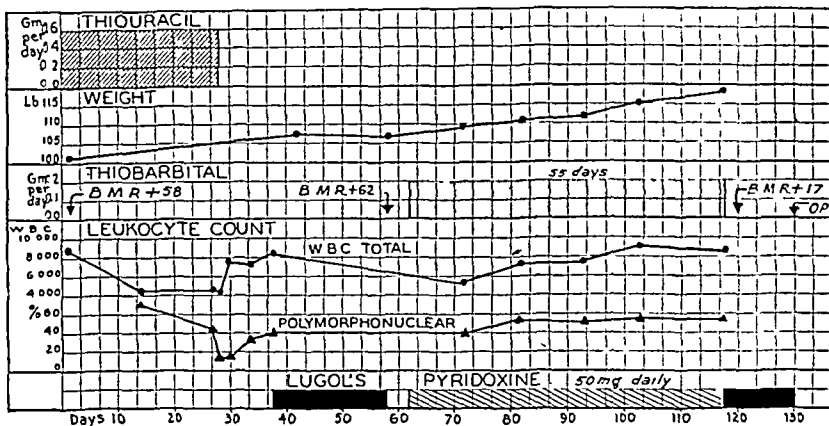


Chart 3.—Blood changes following thiouracil, with subsequent thiobarbital administration, in a woman aged 29, with severe primary hyperthyroidism.

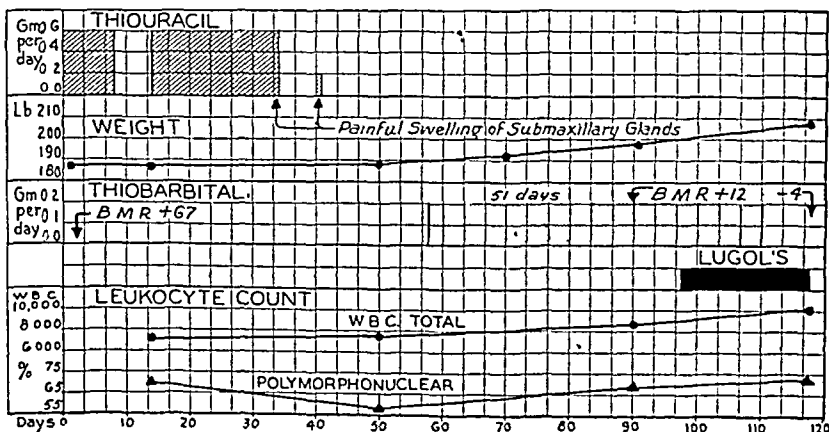


Chart 4.—Development of swollen salivary glands from thiouracil, with subsequent thiobarbital administration, in a woman aged 40, with recurrent primary hyperthyroidism (severe).

tenth day, with thiobarbital on the eighth to twelfth day and in 1 case after five months of treatment. This experience with the increased frequency of reactions to thiobarbital has led to the therapeutic policy of resorting to thiobarbital only for patients who have reactions to thiouracil. In this role it has been of great help.

DURATION OF TREATMENT

Response to treatment was found to be similar in every respect to that observed with thiouracil. Improvement occurred within seven days of starting therapy and continued until full control of all objective and subjective signs and symptoms of hyperthyroidism was obtained. In the use of thiobarbital as with thiouracil, it was found that it took approximately one day of treatment for each percentage of elevation of metabo-

4 Of the 2 patients developing agranulocytosis, 1 received pyridoxine and the other folic acid with the thiobarbital. Neither substance seems to prevent the development of blood changes.

5 Bartels, E. C., and Blizard, E. C. Toxic Reactions to Thiouracil. *Lancet Clin. Bull.* 4: 150-158 (July) 1945.

lism, as shown by 9 cases with an average initial basal metabolic rate of +46. The average final basal metabolic rate was +8 after an average of forty-one days of treatment. Previous iodine therapy retarded the action of thiobarbital as it did with thiouracil. The dose of 0.2 Gm. daily was used for the first patients treated, but at the suggestion of Dr. Astwood the dose was cut to 0.1 Gm. a day. The response seemed as prompt and satisfactory, so now a dose of only 0.05 Gm. is being used, with speed of improvement comparable to that observed with the larger doses. The length of time thiobarbital was administered to the 28 patients varied from eight to one hundred and seventy-three days.

Those patients having thyroidectomy after optimum preparation with thiobarbital had an anesthesia and a postoperative course equally satisfactory to those patients receiving thiouracil preparation. Of the patients having operation, 21 had subtotal thyroidectomy. There was no postoperative death. The pathologic report on the thyroid tissue removed was in no way different from that after treatment with thiouracil.

The thiobarbital treated patients were given iodine for three weeks preoperatively to accomplish involution of the thyroid gland, as with thiouracil management.⁶ No surgical difficulty was encountered in the removal of these thyroid glands.

SUMMARY

1. Twenty-eight patients with hyperthyroidism have received thiobarbital, and definite and satisfactory antithyroid response was obtained in all.

2. Of 9 patients in whom toxic reactions to thiouracil developed, 7 tolerated thiobarbital, accomplishing complete relief of hyperthyroidism.

TABLE 2—Reactions to Thiobarbital

	Cases
A. Fever	
a. 12th day	1
b. 8th day	2
d. Fever late (after 5 months of treatment)	1
B. Changes in white blood cells	
a. Leukopenia with granulocytopenia, 8th day	1
b. Leukopenia with granulocytopenia, 21st day	1
c. Agranulocytosis	
1. 14th day	1
2. 25th day	1
Total	8

3. Eight of the 28 patients receiving thiobarbital, or 28 per cent. developed toxic reactions to the drug. Depressive changes in the white blood cells were the

only serious reactions. Two patients developed agranulocytosis. There was no death due to the drug.

4. The time required to control hyperthyroidism with thiobarbital was found to be the same as that with thiouracil. The antithyroid effect of thiobarbital is

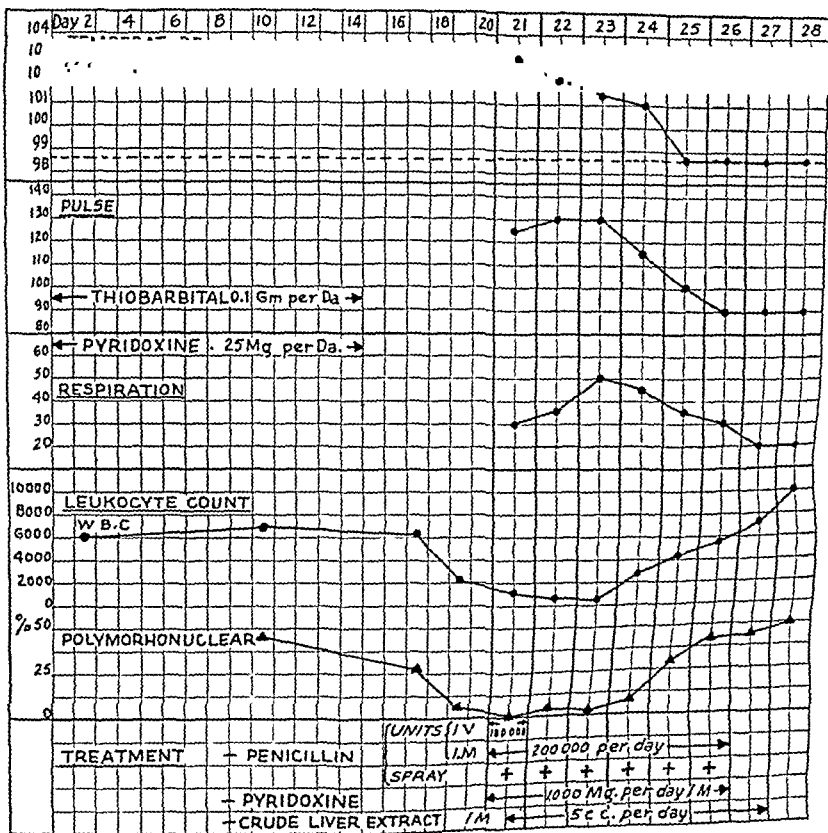


Chart 5—Agranulocytosis after administration of thiobarbital for fourteen days. Recovery following penicillin treatment. Note failure of pyridoxine to prevent blood changes. The case was one of severe primary hyperthyroidism during one year, with weight loss of 30 pounds (136 Kg.), basal metabolic rate +40.

apparently twelve times that of thiouracil, since 0.05 Gm. of thiobarbital accomplished the same result as 0.6 Gm. of thiouracil was observed to accomplish. Since no side effects were observed with the smaller dose

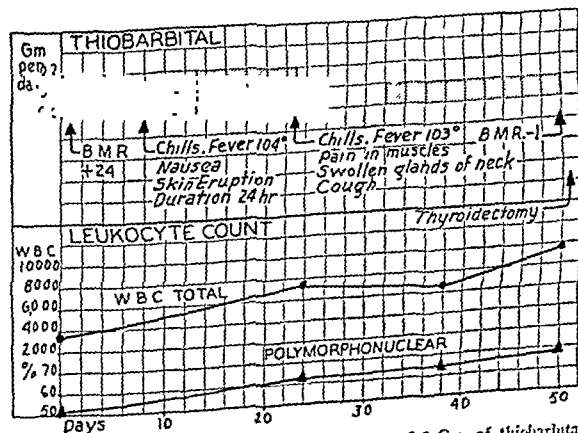


Chart 6—Fever reaction on two occasions from 0.2 Gm. of thiobarbital a day, with subsequent continued treatment of 0.1 Gm. a day without reaction, in a woman aged 41, with adenomatous goiter.

(0.05 Gm.), further studies with this dose seem justified to determine its clinical effectiveness.

5. The anesthesia and postoperative course of patients treated with thiobarbital is similar to that of the thio-

6. Lahey, F. H.: The Combination of Lugol's Solution with Thiouracil in the Preoperative Preparation of Patients with Toxic Goiter, *Lahey Clin. Bull.* 4:23 (July) 1944; Thiouracil, editorial, *Surg., Gynec. & Obst.* 81:335-336 (Sept.) 1945. Lahey, F. H.; Bartels, E. C.; Warren, Shields, and Meissner, W. A.: Thiouracil: Its Use in the Preoperative Treatment of Severe Hyperthyroidism, *Surg., Gynec. & Obst.* 81:423-439 (Oct.) 1945.

uracil treated patient. The combined use of thiobarbital and iodine produced satisfactory involution of the thyroid gland.

6. The high percentage of reactions to thiobarbital has led to the use of thiobarbital for only those patients unable to tolerate thiouracil.

DIAGNOSIS OF CHANCROID

THE RELATIVE EFFICIENCY OF BIOPSIES, CULTURES,
SMEARS, AUTOINOCULATIONS AND SKIN TESTS

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AND

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The methods employed at present for the diagnosis of chancroid are far from satisfactory. Current textbooks indicate that accurate diagnosis can be based on the clinical features, on the results of skin tests or on examination of stained smears. Most venereologists, however, know that each of these methods is subject to major limitations and errors. Actually at present the diagnosis is usually based on negative dark field examinations for spirochetes and on clinical improvement after institution of sulfonamide therapy. The establishment of reliable criteria for a positive diagnosis of chancroid would unquestionably be of value.

The present article is a report on the relative efficiency and usefulness of a number of diagnostic procedures in chancroid. These findings were obtained during an intensive study of a group of 125 patients suspected of having either chancroid or lymphogranuloma venereum. Efforts were made to culture the *Ducrey bacillus* or to demonstrate the presence of the virus of lymphogranuloma venereum whenever feasible. In addition, most of the commonly recommended diagnostic procedures for both diseases were carried out. A positive diagnosis of chancroid was established in 60 of the 125 cases by culture, by biopsy or by both methods. It is our purpose to discuss the practical value and limitations of these two procedures and to compare them with such methods as smears, skin tests and autoinoculations. To our knowledge there has been no comparable study in which evaluation of diagnostic tests has been based on proved cases of chancroid.

METHOD OF STUDY

Patients selected for this study were admitted to a special clinic in the Genitoinfectious Disease Department of Grady Hospital. At the first visit a complete history was taken and physical examination was made; blood specimens were collected and dark field examinations, smears, cultures, autoinoculations, skin tests and biopsies were carried out. Patients were instructed to return at the end of forty-eight hours for a reading of skin tests and autoinoculations and for repetition of smears and cultures. Chemotherapy was begun at that time. Patients then returned at weekly intervals for the first month and every two or three weeks thereafter for a period of at least ten weeks. At each visit blood was taken for Kahn and Wassermann tests, protein determinations and complement fixation tests for lympho-

granuloma venereum. Skin tests were also repeated when indicated.

Of the 125 patients admitted to the study, a diagnosis of chancroid was regarded as established in 60 by biopsy, by culture or by both methods. All of these 60 patients were Negroes; 38 were males and 22 were females. The duration of symptoms ranged from three to forty-two days, the average being sixteen days. Of the remaining 65 patients 14 were proved to have lymphogranuloma venereum by virus isolation, 6 were contacts of these cases and 14 had other genital lesions such as syphilis, granuloma inguinale and herpes. Eight patients became delinquent before sufficient laboratory studies had been obtained. The diagnoses in the remaining 23 cases (in 20 of which there were no primary lesions) could not be established with certainty. Eighteen of them appeared clinically to be lymphogranuloma venereum while 5 appeared to be chancroid.

BIOPSY

The histologic changes occurring in chancroid are generally believed to be nonspecific. For this reason biopsy has seldom been employed as a diagnostic method. In addition, the removal of tissue from the genitalia has been regarded as too formidable a procedure for routine clinic practice. Greenblatt,¹ however, has recently indicated that the histologic changes occurring in chancroid may occasionally suggest the diagnosis and that biopsy may at times be of value.

In this investigation the histology of chancroid has been carefully studied and we believe that the histologic pattern of this infection is sufficiently distinct to permit a reasonably certain diagnosis in nearly every instance. In fact, in our experience biopsy appeared to be the most efficient single method of diagnosis. Biopsy can be performed in an outpatient clinic with relative ease. Our practice was to remove a portion of tissue from the ulcer or wall of a ruptured bubo with a Gaylors biopsy forceps. No anesthesia was used, and it was possible to obtain a fragment of tissue averaging 3 mm. in diameter with little pain and without troublesome bleeding. Biopsies were done in 59 of the 125 cases in this series, and a histologic diagnosis of chancroid was made in 45 instances. In 35 of these the diagnosis of chancroid was confirmed by positive culture for the *Ducrey bacillus*. In all 10 cases in which the organism could not be cultured the clinical features were consistent with the diagnosis of chancroid. In the remaining 14 cases lymphogranuloma venereum was diagnosed in 7, granuloma inguinale in 2, syphilis in 2 and nonspecific inflammatory process in 3.

A description of the technic for histologic diagnosis of chancroid has been given in detail in another article.² For good results it is essential that care be observed in the fixing and staining of the tissue. On examination of the sections, the lesion is found to consist of three zones. The surface zone or base of the ulcer is rather shallow and is made up of polymorphonuclear leukocytes, fibrin, red blood cells and necrotic tissue. Below this is a fairly wide layer of edematous tissue in which endothelial cells in various stages of proliferation outnumber all other cellular components. Newly formed blood vessels are numerous and may show palisading with occasional degeneration of the vessel walls and thrombosis. Finally there is a deep zone in which

Aided by a grant from the Venereal Disease Division of the United States Public Health Service.

From the Departments of Medicine and Pathology, Emory University School of Medicine, the Clinic for Genitoinfectious Diseases, Grady Hospital, and the Georgia Department of Public Health

1. Greenblatt, R. B.: Management of Chancroid, Granuloma Inguinale and Lymphogranuloma Venereum in General Practice, *Ven. Dis. Inform.*, 1943, supp. 19, p. 8.

2. Sheldon, W. H., and Heyman, A.: Studies on Chancroid: I. Observations on the Histology with an Evaluation of Biopsy as a Diagnostic Procedure, *Am. J. Pathol.*, to be published.

there is a dense infiltration by plasma cells and lymphocytes. Demonstration of Ducrey bacilli in the tissue is occasionally possible.

CULTURE

Demonstration of the etiologic agent is obviously a desirable method of diagnosis but is rarely employed. Teague and Deibert³ in 1920 reported very favorably on the possibilities of culture diagnosis, but more recent writers have not recommended it. During the present study considerable attention was devoted to the possibilities of the cultural method of diagnosis, and some success was attained. The technic eventually adopted, a modification of that used by Teague and Deibert, has been described in detail elsewhere.⁴ Whole defibrinated rabbit blood was used as a culture medium, and diagnosis was based on recognition of the typical morphology and staining of the Ducrey organisms in smears of the culture after twenty-four to forty-eight hours' incubation.

In this series cultures were made of all genital lesions and of all material aspirated from buboes. Cultures were positive for the Ducrey bacillus on one or more occasions in 50 patients. In 10 additional patients culture was negative but biopsy revealed the typical microscopic appearance of the chancroid lesion. In these 10 cases the lesions were either in the vagina or on the cervix or had been present for a long time. Since such lesions are nearly always heavily contaminated by other bacteria, cultural demonstration of the Ducrey bacillus is difficult.

Cultures of primary lesions were positive more frequently than were cultures of the associated buboes. Only 11 of 24 bubo cultures in the 60 proved cases of chancroid were positive.

SKIN TEST

Although opinions have varied as to its specificity and sensitivity, the skin test with Ducrey vaccine has been widely used as a specific diagnostic test for chancroid. Some workers⁵ have reported positive skin reactions in approximately 95 per cent of the cases of chancroid. Others⁶ found that only 70 to 80 per cent of the cases showed positive skin tests. It is noteworthy that these reports were based on clinical diagnosis only.

In the present study all patients were tested with a commercial Ducrey vaccine (Lederle). The development of an area of induration 6 mm. or more in diameter forty-eight hours after the inoculation was regarded as a positive reaction. Positive skin tests were found in only 46 of the 60 proved cases of chancroid. In 10 of the 14 patients who originally showed negative reactions, skin tests were repeated four to ten weeks later and were still negative.

A further limitation of the value of the skin test for chancroid lies in the fact that the positive reaction persists for years after its development. One cannot be certain, therefore, whether a positive test represents the existing infection or a previous one. In this connection we have recently carried out a skin test survey

on 473 Negro hospital patients, none of whom were known to have had chancroid recently. Approximately one third of adults over 25 years of age gave a positive reaction.⁷

Even when skin tests for both chancroid and lymphogranuloma venereum are done, the results may be confusing. Positive reactions for lymphogranuloma venereum are very commonly encountered in Negroes. In the group of 60 proved cases of chancroid, 20 patients gave positive skin reactions for both diseases. Twenty-six patients reacted only to the Ducrey vaccine, while in 4 patients the results of the skin tests were entirely misleading, the Ducrey reaction being negative and the lymphogranuloma venereum test being positive. It is obvious, therefore, that skin tests alone are of limited value in the differential diagnosis of chancroid.

AUTOINOCULATION

The value of autoinoculation as a diagnostic method was investigated in 36 of the 60 proved cases of chancroid. In this procedure a loopful of exudate from the genital ulcer is rubbed into a scarified area on the forearm. The area is then bandaged and kept covered for forty-eight hours, at which time the result is determined. A take is indicated by the development of small pustules or ulcerations in which Ducrey bacilli can be identified either by smear or by culture. In 20 of the 36 cases a positive diagnosis was possible from the autoinoculation; in the remaining 16 cases no lesion developed in forty-eight hours. There were only 2 cases in the entire series wherein the Ducrey bacillus was cultured successfully from the autoinoculation and not from the primary lesion.

Autoinoculation has several disadvantages. As noted in the foregoing paragraph, lesions do not always develop at the site of the inoculation. Furthermore, the development of a pustular lesion is not proof of the diagnosis of chancroid, since pyogenic bacteria may be transferred from the genital lesion. Autoinoculation therefore still imposes the necessity of proving the diagnosis by the use of smears or cultures. Moreover, the establishment of a new area of infection is not devoid of danger. While the lesion is inconsequential at the end of forty-eight hours and recedes promptly with sulfonamide therapy, it may, without treatment, develop into a serious infection. A few patients in this series neglected to return to the clinic for a week or more, at which time large chancroidal infections of the arm had developed. Another disadvantage of autoinoculation is that it necessitates delay in treatment, which must be withheld until the result can be determined. For these reasons we believe that autoinoculation is of limited value as a method of diagnosis and that it cannot be recommended for general use.

SMEARS

It would indeed be convenient if a diagnosis of chancroid could be made in a majority of cases simply by demonstrating Ducrey bacilli in stained smears from genital lesions. Different workers have reported varying success with the method. Among recent favorable reports are those of Greenwald,⁸ who obtained positive smears in 65 per cent of 76 soldiers thought to have chancroid, and of Kornblith, Jacoby and Chargin,⁵ who

3. Teague, O., and Deibert, O.: The Value of the Cultural Method in Diagnosis of Chancroid, *J. Urol.* 4: 543, 1920.

4. Beeson, P. B., and Heyman, A.: Studies on Chancroid: II. Efficiency of the Cultural Method of Diagnosis, *Am. J. Syph., Gonorr. & Ven. Dis.*, to be published.

5. Kornblith, B. A., Jacoby, A., and Chargin, L.: Chancroid: Treatment with Sulfathiazole and Sulfanilamide, *J. A. M. A.* 117: 2150 (Dec. 20) 1941. Saunders, H. C.; Canizares, O., and Reider, R. F.: Chancroid: A Comparative Study of the Ito Test Made with Three Vaccines, *New York State J. Med.* 39: 447, 1939.

6. Knott, L. W.; Bernstein, L. H. T.; Eagle, H.; Billings, T. E.; Zobel, R. L., and Clark, E. G.: The Differential Diagnoses of Lymphogranuloma Venereum and Chancroid by Laboratory and Skin Tests, *Am. J. Syph., Gonorr. & Ven. Dis.* 27: 657, 1943. Robinson, H. M.: Analysis of Intracutaneous Tests on 309 Patients for Lymphogranuloma Venereum and Chancroid, *South. M. J.* 33: 144, 1940.

7. Heyman, A., and Beeson, P. B.: Studies on Chancroid: III. Ducrey Skin Reactions in Negro Hospital Patients, *J. Ven. Dis. Inform.*, to be published.

8. Greenwald, E.: Chancroidal Infection: Treatment and Diagnosis, *J. A. M. A.* 121: 9 (Jan. 2) 1943.

claimed a positive diagnosis from smears in 88 per cent of 175 cases. On the other hand, many workers are less enthusiastic about this method. In the U. S. Army, for example, smears are not recommended.⁹

The diagnosis of chancroid by means of direct smears is based on certain characteristics of morphology, staining and arrangement of the Ducrey bacilli. The organisms are short, plump, gram negative bacilli with rounded ends. When stained by the method of Pappenheim or Sellers they exhibit a tendency to bipolar staining which gives some of them the "closed safety-pin" appearance. The Ducrey bacilli may be situated intracellularly, but more often they lie outside the cells, singly or in small clusters, as shown in the photomicrograph. Greenblatt¹ and Kornblith, Jacoby and Chargin⁵ have stressed the "school of fish" arrangement in which the bacilli are grouped in long parallel columns between cells or shreds of mucus. This arrangement was noted in only a few cases in this series.

Another feature of the direct smear which is often mentioned¹⁰ is the finding of Ducrey bacilli in long chains. In our experience this is also a very rare occurrence.

The positive smears in chancroid usually show relatively few organisms, particularly in early lesions. In advanced cases, especially in female patients, smears are frequently crowded with different bacteria, and under these circumstances it is impossible to make a diagnosis. Some writers have advised that in such cases cleansing soaks should be applied for a day or two and the smear examination then repeated. We have not regarded this practice as desirable, since it would necessitate withholding therapy for one or more days.

In this study smears were made from lesions and bubo material whenever possible. We were able to obtain a positive diagnosis of chancroid by examination of smears in 31 of the 60 proved cases. Ducrey bacilli were seldom found in smears of bubo pus, even when their presence was subsequently established by culture.

In examining smears it was found advantageous to use both Gram and Pappenheim stains. The Gram stain gives a comprehensive picture of the bacterial flora present in the lesion. When organisms showing the typical morphology, staining and arrangement of Ducrey bacilli are seen in the Gram stain, and when the Pappenheim stain subsequently reveals the presence of "safety-pin" forms, the diagnosis of chancroid is reasonably certain.

COMMENT

A positive diagnosis of chancroid can be made in a high proportion of cases by the use of appropriate diagnostic procedures. No one method will be applicable in all cases, and the diagnostic procedure must be selected for individual cases.

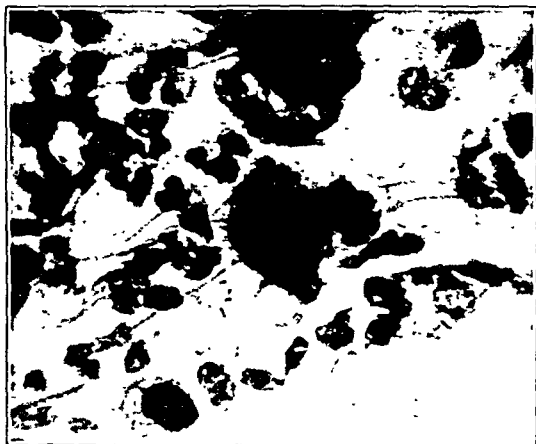
The choice of diagnostic tests in the presence of a primary lesion depends principally on the size of the ulcer and duration of the infection. In small early lesions removal of tissue for biopsy is likely to be painful and is therefore inadvisable. Fortunately, in these cases the diagnosis by culture or smear is most likely to be successful, since there is usually little secondary bacterial invasion. In more advanced lesions biopsy is

feasible and efficient, and in these cases secondary contamination impairs the efficiency of culture and smear diagnosis.

In patients who exhibit inguinal adenopathy without primary genital lesions, a differential diagnosis between chancroid and lymphogranuloma venereum may be impossible. Biopsy is not applicable and, as shown in the foregoing section, cultural demonstration of the Ducrey bacillus often fails. Even when laboratory facilities for demonstration of the virus of lymphogranuloma venereum are available, as in this investigation, the etiologic agent may not be found. It is our belief, nevertheless, that the majority of these cases are lymphogranuloma venereum infections.

SUMMARY

An intensive study was made of a group of 125 cases suspected of being either chancroid or lymphogranuloma venereum. A positive diagnosis of chancroid was made in 60 of them. Of the various methods, biopsy appears to be the most efficient single method of diagnosis and can be depended on to give a diagnosis in over 90 per cent of the cases in which it is applicable. Its use



Ducrey bacilli in a smear of a primary genital lesion. Methylene Blue stain. Magnification 1,100 diameters.

is limited to cases in which there are primary genital lesions. The removal of tissue for biopsy is in most instances a simple procedure, well suited to outpatient work. It is undesirable, however, in patients with small lesions because of the pain involved.

Cultural demonstration of the Ducrey bacillus can be accomplished in at least 75 per cent of all cases. The technic is not difficult and can be carried out by a competent technician. Culture is less likely to be successful in advanced lesions which are heavily contaminated with other bacteria. It is the only means of obtaining a positive diagnosis in patients with buboes but without primary lesions.

Diagnosis by direct smears of genital lesions is possible in approximately 50 per cent of cases. This method has the advantage of simplicity and immediate diagnosis. Unfortunately, it is likely to be useless in advanced lesions, in which there is a heavy growth of other bacteria.

Autoinoculation has several disadvantages and does not take with sufficient frequency to make it of value in routine work.

The skin test for chancroid should never be relied on as the sole method of diagnosis, although it may

9. Diagnosis and Treatment of Venereal Diseases, Circular Letter No. 74, Office of the Surgeon General, Washington, D. C., Government Printing Office, July 25, 1942, paragraph 5.

10. Koteen, H.: Lymphogranuloma Venereum, *Medicine* 24:1, 1945
Pullen, R. L.: Medical Diagnosis, Philadelphia, W. B. Saunders Company, 1944, p. 567.

be of limited value as an adjuvant to other procedures. In this group of 60 proved cases of chancroid, positive skin tests were found in only 46 cases (77 per cent). A further disadvantage lies in the fact that a positive skin reaction persists for many years after an infection and therefore may not be significant in reference to the present illness.

The diagnosis of chancroid can in the majority of cases be established by suitable laboratory procedures.

ADDENDUM

After this paper was submitted for publication, a relevant report on chancroid was published.¹¹ In this study Strakosch and his associates based the diagnosis of chancroid on the history and clinical manifestations. Among 370 cases so diagnosed they obtained positive skin tests in 70 per cent, positive cultures in 59 per cent and positive smears in 43 per cent. They did not do autoinoculations or biopsies.

ELECTROENCEPHALOGRAPHIC FINDINGS IN CENTRAL NERVOUS SYSTEM SYPHILIS

BEFORE AND AFTER TREATMENT WITH PENICILLIN

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Several authors¹ have published reports on the cerebral electroactivity of patients with syphilis of the central nervous system. They agree that no correlation exists between the degree of abnormality of the electroencephalographic pattern and the type, the severity or the duration of the disorder. In the majority of the cases a definitely but nonspecifically abnormal electroencephalogram, or an electroencephalogram on the borderline between normal and abnormal, is found. However, enough patients with various types of neurosyphilitic disorders present electroencephalographic records "within normal limits" to detach from this procedure any immediate diagnostic significance.

After fever treatment has been completed, the abnormal cerebral electroactivity of neurosyphilitic patients often returns to normal or at least improves greatly. The changes of a previously abnormal pattern to normal seem to be correlated with the therapeutic success. Patients whose pathologic process is arrested by the

fever but who retain residual symptomatology also retain many of the electroencephalographic abnormalities. Patients who recover without easily demonstrable signs present electroencephalograms with essentially normal qualities. Thus, although the presence in the electroencephalogram of moderate or pronounced abnormal features possesses no specific value for the initial diagnosis or prognosis of neurosyphilis, the change of the previously abnormal pattern can be used to advantage to determine the effect of antisyphilitic treatment in some instances.

To determine whether treatment with penicillin has any influence on the cerebral electroactivity, patients suffering with neurosyphilis and receiving treatment with penicillin in Duke Hospital were given electroencephalograms before and directly after treatment with this therapeutic agent. Many of the patients were reexamined at intervals after their discharge from the hospital.

The records of 38 patients are included in this study. Of these, 26 had dementia paralytica, 7 patients dementia paralytica with tabes, 1 tabes dorsalis, 1 meningovascular syphilis and 3 asymptomatic neurosyphilis.

The electroencephalograms were obtained with the standard method now employed in many laboratories. Silver disk electrodes were placed over the anterior frontal region, the posterior frontal region, the parietal region and the occipital region, on both sides, 2 to 4 cm. from the midline. These were connected with amplifiers (electroencephalographs) built by Mr. A. M. Grass. Six monopolar tracings or six dipolar tracings in different relative arrangements were recorded simultaneously. If cooperation could be obtained, the patient was asked in each case to overventilate for five minutes.

The records are classified into eight categories: 1. Regular rhythmic-repetitive activity; stable to over-ventilation. 2. "Within normal limits," i. e., a pattern showing normal amplitude with some irregularity of form and occasional sudden changes of frequency; stable to overventilation. 3. "Within normal limits" during the resting state but during overventilation showing occasional bursts of large waves of abnormal form and of shifting frequency. 4. "Within normal limits" during the resting state but affected by five minutes of overventilation to the point of complete disorganization of the pattern lasting for more than thirty seconds after the end of the procedure. 5. During rest a pattern consistently irregular with unstable and frequently enlarged amplitude, with shifting frequency but without further pronounced disorganization during and after five minutes of overventilation. 6. Severely irregular pattern during rest, with further pronounced disorganization during and after overventilation but still with occasional vestiges of relatively organized activity. 7. Continued cerebral dysrhythmia without any trace of "normal" pattern, characterized by large slow and fast waves of consistently erratic form. 8. Focal disturbance of abnormal hemispheric asymmetry.

When classified in this manner twelve electroencephalograms fell within groups 1 to 4 inclusive while twenty-six records showed definite abnormalities of varying degrees. In agreement with previous reports, no correlation existed between the severity of the clinical manifestations and the measure of electroencephalographic abnormality. However, without knowing the clinical history it was possible, because of certain electroencephalographic patterns, to divide the patients roughly into two groups. In the 34 patients with

11. Strakosch, E. A.; Kendell, H. W.; Craig, R. M., and Schwemlein, G. N.: Clinical and Laboratory Investigations of 370 Cases of Chancroid, *J. Invest. Dermat.* 6: 95 (April) 1945.

From the Division of Dermatology and Syphilology, Department of Medicine, and from the Departments of Physiology and Neuropsychiatry, Duke University Hospital and School of Medicine.

The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and Duke University.

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and Malaria in Patients with .. accine
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Neurosyphilis, Urol. & Cutar .. Studies in

encephalitic involvement (dementia paralytica, meningovascular syphilis and dementia paralytica with tabes) all but 3 showed moderate to decidedly abnormal electroencephalograms. The 1 patient with meningovascular syphilis showed unilateral abnormal electroactivity. The 4 patients without encephalitic involvement (tabes dorsalis and asymptomatic neurosyphilis) showed essentially normal electroencephalographic patterns.

Immediately after treatment with 4,000,000 units of penicillin, 50,000 units being given intramuscularly every three hours for eighty consecutive injections, twenty-four records alined themselves within groups 1 to 4 and only fourteen tracings remained with definitely abnormal cerebral electroactivity. However, before treatment group 7 contained eleven records while after treatment this most severely disturbed electroactivity was found in only 1 patient, and this patient had a severe clinical Herxheimer reaction.

The following case report may serve as an illustration of a patient with dementia paralytica:

D. P. D., a white man aged 33, single, developed a penile sore in 1938 and from October 1940 to November 1944 received a total of 54 injections of bismuth, 54 injections of neoarsphenamine and 74 injections of oxophenarsine hydrochloride (mapharsen). In spite of this antisyphilitic therapy there had been a progressive loss of memory, loss of judgment, incoherence of speech, severe headache and inability to take care of his own personal needs, such as shaving and dressing. This finally progressed to incontinence of feces and urine.

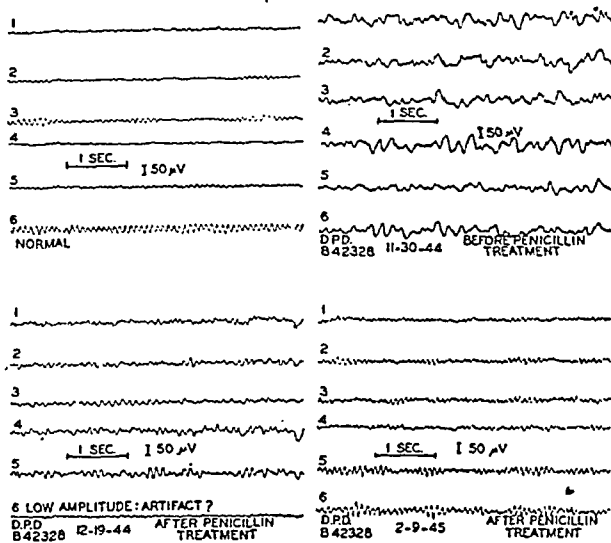
Examination revealed that the superficial and deep reflexes were equal, active and physiologic. Plantar response was extensor bilaterally. The Romberg test was negative. The Hoffmann test was positive bilaterally. Speech was slow and slurred, and the patient could not enunciate words or phrases. His memory was very poor. There was an inability to obey simple orders, and as a result visual field examination and sensory examinations were impossible. Blood serologic tests for syphilis were consistently positive.

The tracing shows the electroencephalograms of the patient before treatment, immediately after treatment with penicillin and about two months later. A normal electroencephalogram is reproduced for comparison.

Clinically after treatment with penicillin the patient showed much improvement, which has persisted. When seen on April 10, 1945 he was holding down a fairly responsible job in a bakery.

In some cases the clinical results were not necessarily manifested in their electroencephalographic findings. Cases with pronounced clinical improvement and con-

processes are apparently permanently reversible. In other cases irritation due to scarring or local intermittent anoxia may well prevent the cerebral electroactivity from reverting to regularity. Ross² has recently shown that months after clinical recovery patients with non-syphilitic encephalitis and meningoencephalitis have



Tracings before treatment, immediately after treatment with penicillin and about two months later, contrasted with a normal encephalogram.

electroencephalograms that vary in the regularity or irregularity of pattern independently of the clinical picture. It should also be borne in mind that unquestionably abnormal electroencephalograms are found in a considerable percentage of the general population although these persons may have no subjective complaints, and neurologic and psychiatric examinations reveal no abnormal findings. Mental status and brain wave pattern, at least at the level of today's interpretation, are incommensurable.

SUMMARY

1. The electroencephalograms of 38 patients suffering from neurosyphilis were studied before and after penicillin treatment.
2. In agreement with previous reports by other authors, no correlation is found between the severity of the neurosyphilitic disorder and the presence or absence of electroencephalographic abnormalities.
3. After penicillin treatment (4 million units within ten days) many formerly abnormal electroencephalograms became normal and most of the remaining records show varying degrees of improvement. No invariable correlation exists between the clinical results of the treatment and the electroencephalographic changes.
4. The abnormal electroencephalograms are interpreted as the consequence of local cerebral anoxia and of generalized or localized cerebral inflammation. Many of these abnormalities are apparently reversible.
5. The presence of abnormal cerebral electroactivity seems to indicate definite encephalitic involvement.
6. Our findings indicate that the electroencephalogram can often be used as a valuable adjunct in determining the effect of penicillin treatment in central nervous system syphilis.

2. Ross, I. S.: Electroencephalographic Findings During and After Acute Encephalitis and Meningoencephalitis. *J. Nerv. & Ment. Dis.*, to be published.

Cerebrospinal Fluid Findings

Date	Cells	Pandy	Total Protein, Mg. per 100 Cc.	Spinal Fluid Wassermann	Colloidal Mastie
11/29/44	41	3+	101	4+ with 0.1 cc.	5132100
12/5/44	2	3+	124	4+ with 0.1 cc.	5355540
12/9/44	5	0	77	4+ with 0.1 cc.	5344321
2/8/45	0	0	49	4+ with 0.1 cc.	5210000
4/10/45	0	0	45	4+ with 0.1 cc.	5210000

Treatment was started on Nov. 30, 1944 and was completed on December 9 with the patient having received 4,000,000 units of penicillin intramuscularly.

tinued abnormal cerebral electroactivity occur in our series as well as cases with slight or negligible clinical improvement whose formerly abnormal electroencephalographic pattern returned to relative regularity and stability.

The abnormalities of the electroencephalogram are interpreted as the expression of local anoxia and a generalized or localized inflammation. In most cases these

INTRAMUSCULAR AND SUBCUTANEOUS ADMINISTRATION OF PENICILLIN IN BEESWAX-Peanut OIL

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Of various methods described for prolonging the action of penicillin by delaying its absorption or excretion,¹ one of the most promising appears to be the intramuscular injection of penicillin-beeswax-peanut oil mixtures. First described by Romansky and Rittman,² this method is an adaptation of the technic of Code and his associates,³ who obtained extended prolongation of the action of histamine, desoxycorticosterone acetate and heparin by mixing them with various oils and beeswax. In the original communications of Romansky and Rittman² it was noted that assayable levels of penicillin could be maintained in the blood stream for seven to ten hours following single intramuscular injections of penicillin-beeswax-peanut oil mixtures. Favorable clinical results have since been reported in the treatment of gonococcal urethritis⁴ and pneumococcal pneumonia.⁵

During the past nine months mixtures containing various concentrations of penicillin, beeswax and peanut oil have been prepared and investigated in this hospital to determine which would produce the greatest prolongation of assayable blood levels and the most favorable clinical results. Detailed descriptions of these studies, which form the background for the present report, will be presented elsewhere.⁶

Factors of importance in the preparation of penicillin-beeswax-peanut oil mixture may be mentioned briefly. The peanut oil and beeswax should be of the highest

purity; totally unsatisfactory mixtures have resulted from the use of peanut oil with a high moisture content.⁷ With the original handshaken mixtures of Romansky and Rittman, calcium penicillin was considered superior to the sodium salt because it was less hygroscopic and produced finer suspensions. However, the somewhat greater attraction of sodium penicillin for water has been found to be of no consequence if the peanut oil and beeswax are added quickly to the dried powder, and it has been further found that, if a mechanical blender is used for mixing, equally fine suspensions can be obtained with both sodium and calcium penicillin.⁷ No significant differences in the duration of blood levels or in clinical results have been found between the sodium and calcium salts when the mixtures were prepared in this manner.⁸ Concentrations of beeswax varying from 4 to 12 per cent produced essentially the same degree of prolongation of assayable blood levels, but the lower concentrations may be considered preferable since mixtures containing only 4 to 6 per cent beeswax are less viscid and contain smaller amounts of foreign material.⁷ It has been recently pointed out by Romansky that the higher the concentration of penicillin per unit volume the greater the prolongation of measurable blood levels.⁹

Penicillin-beeswax-peanut oil mixtures are now being prepared by several commercial companies for experimental study and will soon be available for general use. One such preparation containing 4.8 per cent beeswax and 300,000 units of calcium penicillin per cubic centimeter is under investigation in this hospital at the present time. Our purpose in this report is to present data concerning the absorption and excretion of penicillin following the administration of this preparation to patients with syphilis and with acute gonococcal urethritis. The relation of these observations to dosage and mode of administration of penicillin-beeswax-peanut oil mixtures for therapy will be considered.

METHODS AND MATERIALS

The penicillin-beeswax-peanut oil mixture was very viscid, even after being warmed in the incubator (37 C.) for thirty to sixty minutes. Into a 5 cc. Luer-Lok syringe 1.15 cc. was withdrawn, the extra 0.15 cc. being added to allow for the amount lost in the needle during injection. A number 20 gage needle, 1½ inches in length, was used for the actual injection, and considerable pressure was required on the plunger to force the thick material into the tissues. Injections were made into the gluteal or deltoid muscles and into the subcutaneous tissue overlying the insertion of the deltoid muscle.

Seventy-nine men with gonococcal urethritis received single intramuscular or subcutaneous injections of 300,000 units (1 cc.) of the penicillin-beeswax-peanut oil mixture. Blood was obtained for assay one-half, one, four, eight, twelve, sixteen, twenty, twenty-four and twenty-eight hours after the injection, and urine was collected in twelve hour periods for from forty-eight to seventy-two hours. Follow-up clinical observations and urine cultures were performed at intervals for a minimum of twenty-one days.

Thirty-five men with primary or secondary syphilis received 300,000 units (1 cc.) of the mixture once daily

From the Medical Service, ASF Regional Station Hospital, Fort Bragg, North Carolina, and the Commission on Acute Respiratory Diseases.

Technical assistance in the performance of penicillin assays was given by Mrs. Mary S. Watson, Mrs. Lenore H. Irejer and T/5 Jewel M. Patton.

Dr. Rammelkamp is a member of the Commission on Acute Respiratory Diseases, Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, Preventive Medicine Service, Office of the Surgeon General, United States Army, Washington, D. C.

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for eight injections, a total of 2,400,000 units in eight days. Blood was obtained for assay twenty-four hours after each injection, just prior to the next injection.

Penicillin assays were performed by the Kirby-Rantz modification of the Rammelkamp serial dilution technic.¹⁰ Since there are differences in the standardization of various assay procedures,¹¹ it may be stated that growth of the hemolytic streptococcus (number 98) used for the present tests was completely inhibited by 0.02 unit of penicillin per cubic centimeter. By this method the smallest amount of penicillin measurable in the blood serum (0.5 cc. of undiluted serum plus 0.5 cc. of inoculum containing 1,000 to 5,000 organisms per cubic centimeter) was 0.04 unit per cubic centimeter. This value, 0.04 unit per cubic centimeter, represents the smallest concentration of penicillin measurable in the blood by any of the methods available at present, although with other methods of standardization it may be referred to as 0.02 unit per cubic centimeter or even as a "trace" of penicillin.

TOXICITY

Moderate soreness was noted at the site of injection in almost every instance for from twenty-four to forty-eight hours and was less severe following subcutaneous than following intramuscular injections. Except that it persisted for nine or ten days, the local discomfort was no more severe in the patients receiving multiple injections than in those who received a single treatment. Aside from the local soreness the only toxic manifestation noted was generalized urticaria, which appeared three days after the completion of treatment in two and four days after treatment in 1 of the 35 patients treated for syphilis. It is especially to be noted that with the subcutaneous route no induration, nodule formation or sterile abscesses occurred.

RESULTS

Intramuscular Route.—Results of assays of the blood in 54 patients with acute gonococcal urethritis treated with single intramuscular injections of the penicillin-beeswax-peanut oil mixture are presented in table 1. For convenience, the cases are arranged according to the total duration of assayable levels in the blood serum.

The most striking observation was the variability in absorption of penicillin from the muscle, as reflected by the presence of penicillin in the blood stream. The duration of assayable levels varied from four to twenty-eight hours. In 1 patient the duration was four hours, and in another penicillin was present in measurable quantities on only one occasion, at sixteen hours. In 14 (26 per cent) of the patients an assayable level was present for eight hours and in 22 (41 per cent) for twelve hours. In 37, or 69 per cent, of the patients, then, assayable levels of penicillin were obtained for no longer than twelve hours.

Of the other 17 patients, 6 had measurable concentrations for sixteen hours, 8 for twenty hours, 2 for twenty-four hours and 1 for twenty-eight hours. In 9 of the 17, however, there were one or more occasions on which assayable levels were not present. In case 47, for example, assayable levels were present at one-half, one, four, eight and twenty hours but not at twelve and sixteen hours. Of the 8 cases with levels persisting for twenty hours, 4 showed this irregularity, and of the

3 persisting for more than twenty hours it was present in every instance. By contrast, in the patients in whom penicillin was present in the blood for only twelve hours this irregularity occurred only once (patient 32). Of the whole series of 54 patients, the irregularity was present in 10, or 18.5 per cent.

The explanation of this irregularity of absorption is not clear, but it was thought that it might be related

TABLE 1.—Assays of the Blood (Units per Cubic Centimeter of Penicillin) in Fifty-Four Patients Following Single Intramuscular Injections of 300,000 Units (1 Cc.) of the Penicillin-Beeswax-Peanut Oil Mixture

Case Number	Site (Buttock or Deltoid)	Hours												Total Duration
		½	1	4	8	12	16	20	24	28	32	36	40	
1	B	0.2	0.2	0.7	0	0	0	0	0	0	0	0	0	4
2	B	0.7	0.07	1.0	0.07	0	0	0	0	0	0	0	0	8
3	B	...	0.4	0.7	0.1	0	0	0	0	0	0	0	0	8
4	B	0.2	0.1	0.4	0.04	0	0	0	0	0	0	0	0	8
5	B	0.2	0.7	0.4	0.4	0	0	0	0	0	0	0	0	8
6	B	0.2	0.4	1.0	0.4	0	0	0	0	0	0	0	0	8
7	B	0.1	0.1	0.7	0.5	0	0	0	0	0	0	0	0	8
8	B	0.4	0.2	0.2	0.2	0	0	0	0	0	0	0	0	8
9	B	0.7	0.7	1.0	0.7	0	0	0	0	0	0	0	0	8
10	B	0.4	0.7	0.7	0.2	0	0	0	0	0	0	0	0	8
11	B	...	0.5	0.5	0.07	0	0	0	0	0	0	0	0	8
12	B	0.4	0.4	0.7	0.07	0	0	0	0	0	0	0	0	8
13	B	0.5	0.7	0.7	0.07	0	0	0	0	0	0	0	0	8
14	D	1.0	0.7	0.5	0.07	0	0	0	0	0	0	0	0	8
15	D	0.5	0.7	1.0	0.7	0	0	0	0	0	0	0	0	8
16	B	0.2	0.1	0.04	0.2	0.05	0	0	0	0	0	0	0	12
17	B	0.1	0.07	0.5	0.1	0.1	0	0	0	0	0	0	0	12
18	B	0.07	0.1	0.2	0.5	0.2	0	0	0	0	0	0	0	12
19	B	0.2	0.2	0.7	0.2	0.2	0	0	0	0	0	0	0	12
20	B	0.1	0.2	0.1	0.1	0.2	0	0	0	0	0	0	0	12
21	B	0.2	0.2	0.1	0.2	0.1	0	0	0	0	0	0	0	12
22	B	...	0.1	0.1	0.4	0.2	0	0	0	0	0	0	0	12
23	B	0.7	1.0	1.0	0.04	0.1	0	0	0	0	0	0	0	12
24	B	0.1	0.2	1.0	0.4	0.1	0	0	0	0	0	0	0	12
25	B	0.5	0.5	0.5	0.2	0.07	0	0	0	0	0	0	0	12
26	B	0.4	0.7	1.0	0.2	0.04	0	0	0	0	0	0	0	12
27	B	0.5	0.7	0.2	0.07	0.07	0	0	0	0	0	0	0	12
28	B	0.4	0.4	0.5	0.2	0.1	0	0	0	0	0	0	0	12
29	B	0.5	0.7	1.0	1.0	0.2	0	0	0	0	0	0	0	12
30	D	0.4	0.2	0.7	0.1	0.04	0	0	0	0	0	0	0	12
31	D	0.2	0.5	0.5	0.2	0.2	0	0	0	0	0	0	0	12
32	D	2.0	1.0	0.2	0	1.0	0	0	0	0	0	0	0	12
33	D	0.7	1.0	0.1	1.0	0.07	0	0	0	0	0	0	0	12
34	D	0.5	0.4	0.5	0.2	0.1	0	0	0	0	0	0	0	12
35	D	...	1.0	1.0	0.2	0.2	0	0	0	0	0	0	0	12
36	D	0.2	0.2	0.4	0.2	0.1	0	0	0	0	0	0	0	12
37	D	0.2	0.5	0.5	0.2	0.1	0	0	0	0	0	0	0	12
38	B	0	0	0	0	0	0.04	0	0	0	0	0	0	16
39	B	0.2	0.1	0.2	0.7	0.1	0.05	0	0	0	0	0	0	16
40	B	0.2	0.2	0.2	0.2	0.1	0.04	0	0	0	0	0	0	16
41	B	0.07	0.1	0.04	0.1	0.2	0.07	0	0	0	0	0	0	16
42	B	...	0.2	0	1.0	0	0.1	0	0	0	0	0	0	16
43	D	0.07	0.2	0.2	0.2	0.1	0.2	0	0	0	0	0	0	16
44	B	0.07	0.07	0.05	0.1	0.1	0.05	0.07	0	...	...	...	...	20
45	B	0.1	0.07	0.2	0.4	0.07	0.05	0.04	0	...	...	...	...	20
46	B	0.2	0.2	0.1	0.2	0.07	0.2	0.07	0	0	0	0	0	20
47	B	0.2	0.2	0.1	0.2	0	0	0.04	0	0	0	0	0	20
48	B	0.2	0.4	0.7	0.2	0.1	0.04	0.04	0	0	0	0	0	20
49	B	0.2	0.2	0.2	0.1	0	0	0.07	0	0	0	0	0	20
50	D	0.7	0.7	0.5	0.2	0.07	0	0.2	0	0	0	0	0	20
51	D	0.2	0.2	0.2	0.2	0.1	0	0.1	0	0	0	0	0	20
52	B	0.04	0.07	0.2	0.1	0	0.04	0.2	0.05	0	0	0	0	24
53	B	0.04	0.05	0.2	0.2	0	0	0	0	0.1	0	0	0	24
54	B	0.04	0.2	0	0.2	0.07	0	0	0	0	0.1	0	0	28

to muscular activity of the patient. It seemed possible that an absence of measurable levels at twelve and sixteen hours might occur while the patient was in bed asleep and that muscular activity during the daytime might cause enough gentle massage at the local site to produce measurable levels at eight hours and again at twenty hours. Consequently the data were analyzed from this standpoint. In all 54 patients the injections were made at 9 a. m., and the patients went to bed after the twelve hour blood was obtained. The irregularity, i. e., an absence of penicillin on one or more occasions followed by a measurable level, occurred in

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10 patients on twenty occasions, as follows: one occurred one-half hour after the injection, one at one hour, one at four hours, two at eight hours, six at twelve hours, six at sixteen hours, two at twenty hours and one at twenty-four hours. Thus, an absence of assayable levels occurred with roughly equal frequency during the day-

TABLE 2—*Urinary Excretion of Penicillin (Units \times 1,000) Following Single Intramuscular Injections of 300,000 Units (1 Cc.) of the Penicillin-Beeswax-Peanut Oil Mixture*

Case Number	Hours						Total
	12	24	36	48	60	72	
3	68	16	9	0.9			93.9
4	58	12	2	0.5			72.5
5	140	8	1	0.9			149.9
17	102	11	3	0.6			116.5
18	11.5	26	2	1.0			142.0
19	64	12	5	0.3			81.3
39	70	10	5	0.5			85.5
40	38	22	7	1.0			68.0
52	54	79	9	0.9			142.9
54	66	14	10	0.5			90.5
2	7.5	28	7	1.0	0.5	0.1	109.4
20	81	28	6	1.0	0.4	0.1	116.5
33	69	22	6	0.9	0.6	0.5	98.8
35	9.5	19	9	1.0	0.4	0.4	122.8
53	69	21	5	0.7	0.5	0.1	85.0

time and at night. Another factor to be considered is that a fairly large portion of the penicillin injected was absorbed during the first twelve hours and that therefore absorption of the relatively small amount of penicillin remaining in the depot in the tissues could be expected to occur much more irregularly during the second twelve hours. To settle finally the influence of activity it will be necessary to study a group of patients in which the mixture is injected shortly before bedtime and to determine the frequency of irregularity during the night and the next day.

TABLE 3—*Assays of Blood (Units of Penicillin per Cubic Centimeter) Obtained Twenty-Four Hours After Each Intramuscular Injection of 300,000 Units (1 Cc.) of the Penicillin-Beeswax-Peanut Oil Mixture in Patients Who Received 300,000 Units Daily for Eight Days*

Thirty-five patients were studied, but only the 15 in whom measurable concentrations of penicillin were present on one or more occasions are included in the table

Case Number	Days							
	1	2	3	4	5	6	7	8
1	0	0	0	0	0	0.1	0	0
3	0	0	0	0	0.07	0	0	0
4	0	0	0.07	0.05	0	0	0	0
5	0	0	0.05	0	0	0	0.04	0
7	0	0	2.0	0	0	0	0	0
11	0	0	0.1	0	0	0	0	0.1
14	0	0	0	0	0	0	0	0.04
15	0	0.07	0	0	0	0	0	0
22	0	0	0	0.07	0.05	0	0	0
23	0	0	0	0	0	0	0.07	0
24	0	0	0	0	0	0	0.2	0
25	0	0	0.1	0	0	0	0	0
26	0	0.2	0	0	0	0	0	0
32	0	0	0	2.0	0	0	0	0
35	0	0.05	0.1	0	0	0	0	0

In 13 of the 54 patients in whom the mixture was injected into the deltoid muscle there was no greater prolongation of action, and variability was as frequent as in those who received treatment in the gluteal muscles. Only 3 had measurable levels for more than twelve hours, and in 3 there was an absence of detectable quantities of penicillin on one or more occasions.

The height of the blood concentrations varied from 0.04 to 2.0 units per cubic centimeter. Of a total of 256 levels, 208, or 81.2 per cent, were 0.10 unit per cubic centimeter or higher, and the remainder, forty-eight, or 18.8 per cent, varied from 0.04 to 0.1 unit per cubic centimeter.

Urinary excretion of penicillin in 15 of the 54 patients is presented in table 2. The amount recovered in from forty-eight to seventy-two hours varied from 68,000 to 150,000 units. During the first twelve hours excretion varied from 54,000 to 140,000 units and during the second twelve hours from 8,000 to 79,000 units. The amounts excreted after twenty-four hours were small, declining to only a few hundred units from the sixtieth to the seventy-second hour.

In 35 patients treated for syphilis with eight daily intramuscular injections of 1 cc. (300,000 units) of the mixture, blood was obtained for assay twenty-

TABLE 4—*Assays of the Blood (Units per Cubic Centimeter of Penicillin) in Twenty-Five Patients Following Single Subcutaneous Injections of 300,000 Units (1 Cc.) of the Penicillin-Beeswax-Peanut Oil Mixture*

Case Number	Hours												Total Duration
	1/2	1	4	8	12	16	20	24	28				
1	0.04	0.1	0.2	0.1	0.07	0.1	0	0	0				16
2	0.2	0.4	2.0	0.1	0.07	0.07	0	0	0				16
3	0.4	0.4	0.7	0.1	0.1	0.04	0	0	0				16
4	0.1	0.2	0.2	0.2	0.1	0.1	0	0	0				16
5	0.2	2.0	0.2	0.1	0	0.04	0	0	0				16
6	0.5	0.5	0.2	0.2	0.07	0.2	0	0	0				16
7	0.05	0	0	0.05	0	0.2	0	0	0				16
8	0.05	0.1	0.2	0.2	0.1	0.5	0	0	0				16
9	0.07	0.2	0.2	0.1	0.1	0.07	0	0	0				16
10	0.2	0.2	0.2	0.2	0	0.05	0.2	0	0				20
11	0.2	0.5	0.2	0.2	0.1	0	0.04	0	0				20
12	0.2	0.5	0.5	0.2	0	0.04	0.2	0	0				20
13	1.0	0.1	0.2	0.4	0	1.0	0.05	0	0				20
14	0.1	0.5	0.1	0.07	0	0.1	0.07	0	0				20
15	0.1	0.2	0.2	0.2	0.4	0.4	0.07	0	0				20
16	0.1	0.07	0.1	0.1	0.1	0.1	0.1	0	0				20
17	0.2	0.2	0.2	0.1	0.07	0.1	0.05	0	0				20
18	0.1	0.2	0.1	0.4	0.2	0.07	0.07	0	0				24
19	0.1	0.07	0.05	0.2	0.1	0.2	0.1	0.1	0				24
20	0.1	0.1	0.1	0.07	0	0.05	0.07	0.04	0				24
21	0.05	0.1	0.4	0.1	0.1	0.2	0.05	0.1	0				24
22	0.07	0.2	0.2	0.1	0.07	0	0.1	0.1	0				28
23	0.5	0.5	1.0	0.7	0.2	0	0	0	0.2				28
24	0.2	0.2	0.04	0.1	0	0.07	0	0.1	0.07				28
25	0.1	0.2	0.5	0.2	0	0.1	0	0.1	0.07				28

four hours after each injection on 275 occasions. Of these, assayable levels were present in 20 specimens, or approximately 7 per cent of the total. The results in the patients in whom measurable levels were present are shown in table 3. Penicillin was not found in the blood any more frequently as treatment progressed; i. e., there was no evidence of significant cumulation. This is further borne out by the close agreement of the 7 per cent of twenty-four hour levels among the syphilitic patients, and the 5.5 per cent (3 of 54 patients) noted in the patients who received a single intramuscular injection for the treatment of gonococcal urethritis.

SUBCUTANEOUS ROUTE

Results of assays of the blood serum in 25 patients who received 1 cc. of the mixture subcutaneously are presented in table 4. Prolongation of measurable concentrations of penicillin in the serum was much more satisfactory than with the intramuscular injections. In every instance penicillin was detected in the blood for at least sixteen hours, and in 16, or 64 per cent, of the cases assayable levels were present for twenty hours or more. Of 156 levels, 119, or 76.3 per cent,

were 0.1 unit per cubic centimeter or higher, and of the remainder 37, or 23.7 per cent, varied from 0.04 to 0.1 unit per cubic centimeter. As with the intramuscular injections, instances in which penicillin could not be detected occurred frequently. The urinary excretion confirmed the evidence of superiority of the

TABLE 5.—Urinary Excretion of Penicillin (Units $\times 1,000$) Following Single Subcutaneous Injections of 300,000 Units (1 Cc.) of the Penicillin-Beeswax-Peanut Oil Mixture

Case Number	Hours				Total
	12	24	36	48	
6	60	41	12	2	115
11	78	62	9	1	150
17	59	57	16	2	134
21	48	58	5	2	113
24	64	62	8	1	135

subcutaneous over the intramuscular route (table 5). Less penicillin, on the average, was excreted during the first twelve hours and more during the second twelve hours following subcutaneous injections.

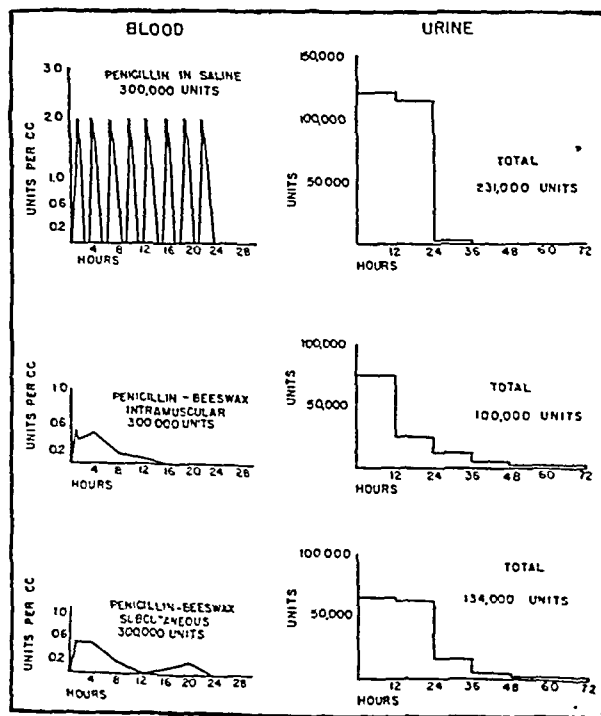
Typical curves of blood and urinary levels with 300,000 units of penicillin in saline solution (37,500 units every three hours for eight doses), and with 300,000 units (1 cc.) of the penicillin-beeswax-peanut oil mixture injected intramuscularly and subcutaneously, are presented in the chart for purposes of comparison.

COMMENT

The present studies indicate that penicillin-beeswax-peanut oil mixtures provide an effective and safe method of prolonging the action of penicillin in the body. Aside from soreness at the site of injection, the only toxic manifestation noted was generalized urticaria, which occurred in 3 of the 40 patients treated for early syphilis with eight daily injections. It is not known as yet whether these reactions represent a sensitivity to beeswax, peanut oil or penicillin.

One of the most striking observations was the variability of absorption and excretion of penicillin following intramuscular injections of the penicillin-beeswax-peanut oil mixture. The location of the injected material in relation to the muscle tissue and fascial planes was probably the most important single factor responsible for this variability. When surrounded by highly vascular muscle tissue, release of penicillin from the oily, waxy mixture occurs rapidly, whereas when it is located between the relatively avascular fascial spaces absorption is slow and irregular. Since the mixture was probably never located in exactly the same place in different patients, it is not surprising that variability should occur. Of importance in this connection is the fact that in order to maintain minimal assayable concentrations of penicillin in the blood stream there must be continuous absorption from the muscle of a relatively large amount of penicillin (at least 2,500 units per hour).¹² Other factors, such as the activity of the patient (sleeping or walking) and the muscle employed (deltoid or gluteal) seemed to have little effect on the rate of absorption. The factor of activity needs further study, however, especially from the standpoint of administering the injection in the evening rather than in the morning.

Ideally, it should be possible to administer a whole day's supply of penicillin in a single injection of a beeswax-peanut oil mixture, with the maintenance of effective therapeutic concentrations in the blood stream for a period of twenty-four hours. Unfortunately, it is evident from the present studies that this is not possible with 300,000 units, and from this standpoint the injection of the mixture is a relatively inefficient method of administration. As indicated in the chart, a single intramuscular injection of 300,000 units of penicillin in beeswax-peanut oil produces in most instances a measurable level of penicillin for only twelve hours, whereas with 300,000 units of penicillin in saline solution given in divided doses of 37,500 units every three hours assayable levels are maintained almost continuously for a period of twenty-four hours. This relative inefficiency is partly due to the fact that with the mixtures penicillin is gradually absorbed from the depot in the muscle for a period of several days. After twenty-four hours, however, and indeed in most instances after twelve hours, the amounts which appear in the urine are too small to be indicative of the presence of therapeutic concentrations in the blood and tissues. Even when the mixtures are injected daily for several days, the amounts of penicillin being slowly absorbed from several depots are too small to produce a significant cumulative action. This was well illustrated in the patients with syphilis, in whom assayable levels were present no more frequently following several doses than after a single injection.



Typical blood levels and urinary excretion in patients receiving 300,000 units of penicillin in saline solution (37,500 units every three hours for eight doses) and with 300,000 units (1 cc.) of the penicillin-beeswax-peanut oil mixture injected intramuscularly and subcutaneously.

Evaluation of these results in terms of clinical therapy is difficult, since the amount of penicillin necessary to bring about a cure in various types of infections is not definitely established. It would appear, however, that since the penicillin-beeswax-peanut oil mixture under investigation produced assayable concentrations of penicillin for only twelve hours in most instances, intra-

12. Rantz, L. A., and Kirby, W. M. M.: The Absorption and Excretion of Penicillin Following Continuous Intravenous and Subcutaneous Administration, *J. Clin. Investigation* 23:789 (Sept.) 1944

muscular injections of the mixture should be made twice a day for the treatment of infections in which it is desirable to maintain therapeutic concentrations of penicillin throughout the duration of therapy. Examples are severe infections with bacteremia, especially those caused by staphylococci; subacute bacterial endocarditis, and possibly syphilis. The necessity of injecting 600,000 units of penicillin to obtain assayable levels in the blood stream for twenty-four hours again emphasizes the fact that the convenience of fewer injections is achieved only at the sacrifice of fairly large amounts of penicillin. This is further borne out by the fact that 300,000 units of penicillin in saline solution given in a twenty-four hour period (37,500 units every three hours) is a larger dose than is usually administered even in the treatment of the most severe infections.

Clinical results so far obtained are in agreement with the evidence indicating that larger amounts of penicillin are necessary when penicillin-beeswax-peanut oil mixtures are employed. Relapses have been noted in cases of pneumococcal pneumonia treated with 400,000 units of penicillin in beeswax-peanut oil (100,000 units daily), while in a control series no failures occurred with a total dose of only 120,000 units of penicillin in saline solution given in divided doses.⁵ In gonococcal urethritis a single injection of 300,000 units of penicillin-beeswax-peanut oil produced results no better than those obtained with 100,000 units of penicillin in saline solution (20,000 units every three hours for five doses).¹³ In the present study, three failures have occurred among 40 patients with gonococcal urethritis followed clinically and bacteriologically for a period of twenty-one days. Similarly, two mucocutaneous and serologic relapses have occurred among 35 patients treated for syphilis and followed for a period of eight weeks or more. A larger number of patients and a longer period of follow-up are obviously necessary before these figures will become statistically significant. In general, however, it appears that in order to obtain the best results in severe infections with intramuscular injections of penicillin-beeswax-peanut oil mixtures it is desirable to administer 300,000 units twice daily. With milder infections one injection a day will probably be adequate in many instances.

From the standpoint of prolongation of blood levels and uniformity of absorption, results obtained after subcutaneous administration of the penicillin-beeswax-peanut oil mixture were superior to those following intramuscular injections. The mixture was injected into the subcutaneous tissue directly over the tendinous insertion of the deltoid muscle, since at this point the possibility of introducing some of the material into the muscle was minimized. The presence of fewer and smaller blood vessels in the subcutaneous tissue probably accounts for the slower, more uniform absorption from this site. Since in approximately two thirds of the patients penicillin was present in the blood for a period of twenty hours or more, the likelihood of a single injection daily being adequate for most infections would appear to be much greater than with intramuscular injections. The subcutaneous route has been employed in only 25 cases, and the period of follow-up has not been completed; therefore, clinical results are not yet available.

SUMMARY AND CONCLUSIONS

1. The absorption and excretion of penicillin was studied following 359 intramuscular and subcutaneous injections of a commercially prepared penicillin-beeswax-peanut oil mixture containing 4.8 per cent beeswax and 300,000 units of penicillin per cubic centimeter.

2. There was wide variability of absorption and excretion of penicillin. In 54 patients with acute gonococcal urethritis who received single intramuscular injections of 300,000 units (1 cc.) of the mixture the total duration of assayable levels of penicillin in the blood stream varied from four to twenty-eight hours. In 37 (69 per cent) of the patients, levels were present for no longer than twelve hours, and in the other 17 (31 per cent), in whom levels were present for sixteen to twenty-eight hours, irregularity of absorption during the second twelve hours was noted in 9; i. e., there were one or more occasions on which assayable levels were not present.

3. Excretion of penicillin in the urine declined rapidly after the first twelve hours, but small amounts could be detected for seventy-two hours or more.

4. In 35 patients treated for syphilis with intramuscular injections of 300,000 units (1 cc.) of the mixture daily for eight days, assayable levels of penicillin were present twenty-four hours after each injection on 20 of 275 occasions, or approximately 7 per cent. There was no evidence of significant cumulation; i. e., assayable levels were present at twenty-four hours no more frequently following several doses than after a single injection.

5. Results with subcutaneous administration in 25 patients were superior to those following intramuscular injections, both in uniformity of absorption and in prolongation of blood levels. In approximately two thirds of the patients penicillin was present in the blood in detectable quantities for twenty hours or more.

6. From the preliminary clinical results it is concluded that, although larger amounts of penicillin are required than with penicillin in saline solution, penicillin-beeswax-peanut oil mixtures provide an effective and apparently safe method of prolonging the action of penicillin in the body.

ADDENDUM.—Since the completion of this manuscript it has been found that in most patients assayable levels of penicillin are present in the blood for twenty-four hours or more following single subcutaneous injections of 600,000 units (2 cc.) of the penicillin-beeswax-peanut oil mixture.

Inebriety and Crime.—An investigation was undertaken of 3,135 offenders committed to Sing Sing Prison in the two year period 1938 to 1940. The prisoners were classified as inebriates and noninebriates. The classification "inebriate" was based on statements by impartial observers, or admissions to a general hospital for an alcoholic disease, or admission to a state hospital for an alcoholic mental disorder. Of 3,135 prisoners 697, or 22 per cent, were found to be inebriates. In the first year of the period the proportion of inebriates was around 24 per cent and in the second year around 21 per cent. Allowing for random variations, one may say roughly that in a prison population such as that of Sing Sing the incidence of inebriety would be around 25 per cent. On the basis of proper standards one thus arrives at a much lower estimate of 60 per cent based on the indiscriminate use of data.—Banay, Ralph S., in *Alcohol, Science and Society*, New Haven, Quarterly Journal of Studies on Alcohol, 1945.

13. Leifer, W.; Martin, S. P., and Kirby, W. M. M.: *The Treatment of Gonococcal Urethritis with Single Injections of Penicillin-Beeswax-Peanut Oil Mixtures*, New England J. Med., to be published.

Special Article

MEDICAL CARE FOR THE AMERICAN PEOPLE

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HEMPSTEAD, N. Y.

We are concerned with a problem on which there are sharp differences of opinion. In fact, were there not these differences of opinion there would be no problem.

As to the ultimate aim we are all agreed. I believe no one can quarrel with the platform of the American Medical Association, adopted in June 1944, which calls for "availability of medical care of a high quality to every person in the United States." The differences of opinion arise as to how this aim is to be achieved.

As doctors we see the problem in a way no one else can possibly see it. It pertains to our daily work and we are naturally closer to it than any one else. One does not consult a doctor if one wishes to draw up a will. One goes to a lawyer. Neither does one consult a lawyer if one wishes to build a house. One goes to an architect. Yet there are many who think it is not necessary to consult the doctors on any problems related to medical care but that legislators, those engaged in social welfare and other laymen can draw up a complete program, have it adopted and then expect the doctors to make it work. It should be borne in mind that, no matter what system is eventually evolved in this country for delivering medical care, the doctor is the one who is going to have to deliver it. It cannot possibly be delivered by a "social uplifter." Hence it would be better for all concerned if the plan adopted is one which will enlist the cooperation and enthusiasm of the medical profession.

Another point usually lost sight of is that the mere delivery of a quantity of medical care is not solving the problem. The homeopathic precept that the more a thing is diluted the greater its effectiveness went into the discard long ago. What we want is not just more medical care but more medical care of a high quality.

The answer to any complex problem is usually not simple but also complex. So, in our problem of medical care, the answer is not a single one but a multiple one. Yet the Social Security Board and Senators Wagner and Murray and Congressman Dingell refuse to admit there is any possible answer but the single one of a national compulsory sickness insurance, regardless of the fact that nowhere has it been as satisfactory as our own system of private medical care.

A careful analysis of the situation would seem to indicate that there are certain elemental factors which are responsible for our problem. These factors are (1) improper distribution of doctors, (2) lack of proper diagnostic facilities in certain areas, (3) the costs of illness—particularly so-called catastrophic illness—and (4) a general economic factor. These factors are closely related and cannot be considered separately. Why are certain areas devoid or short of doctors? There are two reasons. One is that certain areas are so sparsely settled that there is no attraction for a doctor, not

only because he will have insufficient patients, but because there are no educational or social facilities for him to bring up his children. The other is really the second factor (namely, the lack of proper diagnostic facilities) so that he cannot practice good medicine. In the latter case he either leaves and goes elsewhere or else he does what to my mind is worse, he stays and practices poor medicine. With further reference to the lack of diagnostic facilities, this lack is usually because the community by itself cannot support the necessary facilities.

The third factor, the costs of illness, again is tied up partially with the second: availability or nonavailability of proper diagnostic facilities. The high cost of illness is not in ordinary intercurrent illness but in the cost of diagnosis in the more complicated illnesses, in hospitalization and in private nursing care. Also in sparsely settled areas in long distances a doctor may have to go increase the cost of his services. Still another important reason is the cost of care of the chronic invalid.

The fourth factor—the general economic one—is the matter of housing, clothing, nutrition and sanitation. This is a social problem of the community and not a medical problem, although the neglect of it results in an increase in the prevalence of disease and the necessity for medical care. The solution, however, is not the pouring in of medical care but preventing the necessity for it.

With this as a general background, let us now see how the American Medical Association proposes to solve this problem. On June 22, 1945 the Board of Trustees and the Council on Medical Service and Public Relations of the Association adopted jointly a fourteen point constructive Program for Medical Care.

This program is as follows:

Preamble

The physicians of the United States are interested in extending to all people in all communities the best possible medical care. The Constitution of the United States, the Bill of Rights and the "American Way of Life" are diametrically opposed to regimentation or any form of totalitarianism. According to available evidence in surveys, most of the American people are not interested in testing in the United States experiments in medical care which have already failed in regimented countries.

The physicians of the United States, through the American Medical Association, have stressed repeatedly the necessity for extending to all corners of this great country the availability of aids for diagnosis and treatment, so that dependency will be minimized and independence will be stimulated. American private enterprise has won and is winning the greatest war in the world's history. Private enterprise and initiative manifested through research may conquer cancer, arthritis and other as yet unconquered scourges of humankind. Science, as history well demonstrates, prospers best when free and unshackled.

Program

The physicians represented by the American Medical Association propose the following constructive program for the extension of improved health and medical care to all the people:

1. Sustained production leading to better living conditions with improved housing, nutrition and sanitation, which are fundamental to good health; we support progressive action toward achieving these objectives.

In this connection the American Medical Association has previously stated that "it is not in the public interest that the removal of economic barriers to medical science should be utilized as a subterfuge to overturn the whole order of medical practice. Removal of economic barriers should be an object in itself." To illustrate this point, there appeared in a popular magazine a few years ago a drawing showing a woman in a state of malnutri-

This paper, except for the paragraphs devoted to the implementation of the program, was presented before the Jackson County Health Forum, Kansas City, Mo., on Oct. 17, 1945. The interpretations of the program were endorsed by the Council on Medical Service and Public Relations on October 18. The methods of implementation of the program were drafted and approved at the Conference on Public Relations held at Chicago on October 19 and 20.

tion, clad in rags, surrounded by children also undernourished, likewise clad in rags, standing before a hovel. The picture had as its topic "These people need medical care." Of course they needed medical care, but had they been properly housed, fed and clothed they probably would have needed very little. Yet this picture was used as propaganda to call for a new system of medical care, whereas the fault was not primarily medical but a social fault of their community.

Prevention of disease by inoculation and curing disease in its early stages are excellent, but it must be remembered that good living conditions, including good nutrition, housing and sanitation, are equally important. We have as a shining example of this the condition of some of our prisoners of war, who were released not only in a state of malnutrition but often afflicted with deficiency diseases such as beriberi, diseases influenced by overcrowding such as tuberculosis and diseases due to cold and damp such as arthritis and rheumatic conditions. Again, faulty sanitation may be the main factor in the spread of typhoid, overcrowding and lack of cleanliness in the spread of typhus. The mere provision of a quantity of medical care does not affect the cause of these diseases. The real cause is often economic and not medical.

The implementing of this first point must be by education of the public. There are constant attempts to overthrow the whole order of medical practice on the theory that the people in this low economic group have inadequate medical care, whereas the solution is in raising the economic level of these people.

Constant publicity is recommended on the facts of this particular problem through the American Medical Association, the state associations, the county societies and the women's auxiliaries, by addresses and articles not only in the medical journals but also in the lay press.

2. An extended program of disease prevention with the development or extension of organizations for public health service so that every part of our country will have such service, as rapidly as adequate personnel can be trained.

Not over half of the counties in the United States have a full time public health service. In some cases where a full time service does exist, it is subject to political control, there is no continuity in administration and an inefficient health department results. Now it would not be feasible for every county to have a full time health department of its own because of the expense. However, neighboring counties could form a district health department with a traveling health service and laboratory. The protection of the water, milk and food supplies, proper sewage disposal and mosquito and fly control will practically eliminate many diseases with not only no increase but an actual decrease in the amount of medical care necessary. To do this public support must be secured and in some instances funds from outside the community must be obtained. The medical profession has no objection to the use of federal funds where necessary to establish health departments but believes that the administration of these activities should be under local control, except as to meeting general high standards.

Training of public health officials is important, and when they are trained they should be adequately compensated. At present many public health officials do not receive the income of men engaged in private activities or often in other fields of government.

The implementing of this second point is by means of legislation. Such legislation should also be of interest to the American Public Health Association, the State and Territorial Health Officers Association and the U. S. Public Health Service. It is recommended that the American Medical Association sponsor a conference with these groups in an endeavor to enlist their cooperation in legislative efforts to accomplish the purpose of this item.

3. Increased hospitalization insurance on a voluntary basis.

4. The development in or extension to all localities of voluntary sickness insurance plans and provision for the extension of these plans to the needy under the principles already established by the American Medical Association.

5. The provision of hospitalization and medical care to the indigent by local authorities under voluntary hospital and sickness insurance plans.

These three may be considered together. At present over 19,000,000 people are insured under Blue Cross hospitalization plans and about an equal number are insured through their industries, although there are probably many duplications so that the total is not twice 19,000,000. This method has grown rapidly and tremendously and seems to meet the needs for hospitalization where it is in operation. It would seem, therefore, that extension of this insurance on a voluntary basis so that it is available to every one who desires it should be our aim and that every support should be given it.

Voluntary sickness plans now cover nearly 29,000,000 persons in the United States. The plans vary. Some are industrial, some are medical society sponsored and some are private insurance in commercial companies. The plans also vary as to coverage. Some give complete coverage and others give only partial coverage. Some cover only the employee and others his family as well.

Except for a few industrial plans, the idea is comparatively new. When it was started it was deemed best to begin on an experimental basis in small areas. No one knew what coverage should be given; there was no actuarial background and no one knew how either the public or the profession would react to it. Consequently, progress has been slow. Many plans were abandoned and others revised. Ideas are now crystallizing as to the best type of plan or, rather, plans, as no one plan seems to be suited to every area and every class. By that I mean that what will work in New York City will not necessarily work in Topeka, Kan. Rural and agricultural needs are different from metropolitan and industrial. However, certain elements in these plans may be workable nationally, and efforts are being made to establish national indemnity plans.

The American Medical Association would extend these voluntary plans and has approved the principle of so-called medical service plans for the medically indigent. To show how these matters progress, the original approval of voluntary medical insurance was on an indemnity basis only. Now both are approved so long as they follow certain principles.

The American Medical Association also has recommended the use of the voluntary insurance principle in the hospitalization as well as the medical care of the indigent. Public authorities could make use of these plans wherever they are available at a lower cost and with more efficient service than by extending institutions for the indigent or employing full time physicians to care for the indigent. Some of those who desire

compulsory sickness insurance say this cannot be done because the law does not permit it, but I note that they have no hesitation in urging changing of the law to permit compulsory sickness insurance, which the law does not permit now either.

Since there will be a special report on this subject, it is recommended that any decisions on this subject be integrated into the implementation of these three points of the program.

In addition, it is recommended that the medical care of veterans be integrated into these voluntary plans of hospitalization and medical care. This large group would help stabilize these plans and at the same time give the veterans free choice of physician and permit them to be cared for on a local basis without the necessity of vast extension of government institutions.

6. A survey of each state by qualified individuals and agencies to establish the need for additional medical care.

The scientific approach to the problem is to determine the needs first and then to treat specifically the needs that are so developed. It is important to have a survey in every state to find where the weakness lies—whether in the field of infant mortality, venereal disease, tuberculosis, lack of hospital beds, lack of diagnostic facilities or elsewhere—and then to take steps necessary to meet those needs.

These surveys should include every medical facility, not just certain ones, as no true picture can be obtained of any facility without considering the problem as a whole and with due reference to every factor.

These surveys should be made by the state agencies, public and private, with cooperation and approval of the state medical associations.

7. Federal aid to states where definite need is demonstrated, to be administered by the proper local agencies of the states involved with the help and advice of the medical profession.

The medical profession, under certain conditions, approves appropriations by Congress of funds for medical purposes. It feels, however, that in many instances states have sought aid and appropriations for such functions without any actual financial need on the part of the state, in order to secure such funds as might be available. Funds may be allotted when proof is given of the actual financial need by the state for prevention of disease, for promotion of health or for the care of the sick. Health is primarily a local responsibility. Physicians should be integrated into the control of all medical affairs, and the control of local projects should be local in character.

This likewise is a legislative matter and should be implemented by the American Medical Association again, in collaboration with the other agencies listed under item 2, together with the collaboration of the state medical associations.

8. Extension of information on these plans to all the people with recognition that such voluntary programs need not involve increased taxation.

One of the difficulties we encounter is that the people do not realize the vast amount of medical service now available. In every large city and in many counties and states there are extensive provisions for medical service, of which those entitled do not avail themselves. Education of the public as to what is available and how to obtain it is essential. The Medical Society of the State of New Jersey a few years ago broadcast to the public via the press, radio and public speakers that any person in the state of New Jersey who could not get medical

care should immediately contact the state society. Out of the entire population of New Jersey only 7 persons applied, and in each of these 7 cases medical care was available. They simply did not know how to obtain it.

This is again a purely educational matter, and the implementation should be through the American Medical Association, the state associations, the county societies, the woman's auxiliary and the appropriate voluntary health agencies. The bulk of the information necessary is, of course, local and hence the educational activities must be necessarily largely local.

9. A continuous survey of all voluntary plans for hospitalization and illness to determine their adequacy in meeting needs and maintaining continuous improvement in quality of medical service.

Exactly as a preliminary survey is needed to determine the areas of need, so also must there be continuous surveys of the manner in which existing provisions meet existing needs in order to permit progress. There should be continuous evaluation of medical services so that they may be kept up to the best that can be provided.

We will now consider items 10, 11, 13 and 14 together, as they are related and pertain to the emergency, the result of the war:

10. Discharge of physicians from the armed services as rapidly as is consistent with the war effort in order to facilitate redistribution and relocation of physicians in areas needing physicians.

11. Increased availability of medical education to young men and women to provide a greater number of physicians for rural areas.

13. Adoption of federal legislation to provide for adjustments in draft regulation which will permit students to prepare for and continue the study of medicine.

14. Study of postwar medical personnel requirements with special reference to the needs of the veterans' hospitals, the regular army, navy and United States Public Health Service.

Some 60,000 physicians have entered the armed forces voluntarily to do their part in the war. Discharge of these physicians as rapidly as possible is essential, to relieve areas where there is an insufficient number of physicians to care for the civilian population and to facilitate redistribution and relocation of physicians in areas requiring them. The American Medical Association has established a Bureau of Information to determine such areas of need and to facilitate relocation of physicians.

The present draft regulations ignore the necessity of providing students for necessary premedical study. The United States is the only country that has not protected the training of individuals for medicine and other sciences. Unless steps are taken to remedy this situation there will be an increasing shortage of physicians in the near future. Any legislation for compulsory military service should recognize the need for maintaining continuous training in science and particularly in the science of medicine.

Item 14 ties in with this, as there will be a greatly increased call for physicians during the next few years to meet the needs of an increased regular army, regular navy, Veterans Bureau and occupied territory. Not only shall we need more physicians, but care must be taken to see that only the physicians actually necessary are taken into the services. There are many complaints that physicians in the services are in excess of what is required and that their professional skill is not properly utilized. This may have been necessary or unavoidable in war but certainly is not in peace.

Item 11 is closely related to the three preceding items. Medical schools have suffered during the war from a lack of properly qualified persons to take the courses. The removal of premedical students from the colleges by the Selective Service System is chiefly responsible. The American Medical Association advocates every possible effort toward filling the classes of the premedical students and toward expanding medical education to meet the needs of the nation. To attract physicians to rural areas there must be adequate diagnostic facilities, and in some cases subsidies may be necessary.

To implement these items, the American Medical Association should continue its close contact with the Army and Navy and continue urging that physicians be released as rapidly as possible and, further, that the existence and functions of the Bureau of Information be steadily advertised to the men in the services.

Pressure should also be continued on the responsible authorities by both the American Medical Association and the state medical associations to effect the recommended changes in the draft regulations, and if this fails legislation should be sponsored to bring about these changes.

With reference to item 11, this is in part related to the establishment of adequate diagnostic facilities so that there will be attractions for the physician in rural areas. While the training of more physicians is necessary, this is no surety that when they are trained they will settle in rural areas. The use of grants from the various funds or subsidies by the local communities will in some cases be necessary, in addition to the setting up of proper diagnostic facilities, if the problem is to be solved. The surveys recommended in items 8 and 9 should include the needs of rural areas as to additional physicians, and investigation should be made of the most feasible method of alleviating the shortages.

12. Postponement of consideration of revolutionary changes while 60,000 medical men are in the service voluntarily and while 12,000,000 men and women are in uniform to preserve the American democratic system of government.

This, of course, refers to legislation such as the Wagner-Murray-Dingell bill. Lest there be misunderstanding, let me state at the start that this does not mean that the American Medical Association is weakening in its stand against national compulsory sickness insurance. It merely means that, with such a large proportion of doctors and the public in service and unable to give their opinions, no such revolutionary change should even come up for discussion until all the people have an opportunity to express themselves.

We are unalterably opposed to the Wagner-Murray-Dingell bill for the following reasons: It is un-American; it is inordinately expensive, involving an 8 per cent pay roll tax up to \$3,600 of income, and this probably inadequate. In fact, a recent economic survey indicates that with a national income of \$120,000,000,000 a 15 to 17 per cent tax will be necessary and even this, perhaps, inadequate. It sets up another federal bureaucracy with a lay board—the Social Security Board—at its head, to decide all medical matters, and although the administrative head is the Surgeon General, who incidentally usually is, but need not by law be, a physician, nevertheless he is an appointive, not an elective, official and he is subject to the dictates of this lay board; a third party, namely the government, is brought between the doctor and the patient, and the doctor is responsible

to that third party. The head of the government camel is thrust into the tent of medical education and medical research. While free choice of physician is provided for in the bill, this is a "come on," as it means free choice of the physician who will take part in the scheme. A poor type of medical care is encouraged—quantity without regard to quality. Inefficiency, red tape and political medicine will result. Should the bill be enacted, government control would cover not only doctors but eventually dentists, nurses, technicians, hospitals, medical and hospital supplies and equipment. Notwithstanding Senator Wagner's claim that this bill is not socialized medicine, it is just that. It is paternalistic and inevitably will lead to national socialism.

The *Saturday Evening Post* has the following to say: "One reason why the compulsory state seems to be gaining on us is defeatism among the vast majority who don't want any part of it. We have been told so often and so emphatically that collectivism is 'inevitable' that we have come to believe it, as if some strange bacterial growth were gnawing at our economic vitals and it was too late for an operation. Investigation of specific symptoms usually reveals that the only 'inevitable' feature of the march toward collectivism is the determination of the little group which wants to collectivise us."

The wording of this item is already somewhat obsolete, as there are no longer 60,000 physicians or 12,000,000 persons in the services. The number is dropping steadily. The purpose of this item originally, however, was to protect the rights of all Americans to express themselves on any revolutionary change affecting their daily lives.

It is recommended that the American Medical Association give notice that it has not only in the past, does now, but will in the future oppose any legislation which by its very nature engenders a poor type of medical care, encourages dependency or regiments either the patient or the physician.

We consider such legislation as compulsory sickness insurance, no matter how it may be dressed up, as reactionary. There have been attempts for over thirty years to bring about compulsory sickness insurance in some parts of this country and for several years nationally. All the bills introduced have the same basic faults. It is the same old specter with the addition of occasional new cosmetics in the hope that they will fool the public into thinking it is something new. It is an all or nothing program and is in the nature of a "shotgun prescription."

On the other hand, our program attacks the basic deficiencies, offers specific treatment for specific ills, is elastic and can be modified from time to time as conditions indicate.

CONCLUSION

It would be better to rearrange the order of the program so that it may be divided into four general aims.

I. Those primarily educational. This covers items 1 and 8, namely the removal of economic barriers so that a great deal of medical care will be unnecessary by eliminating its need; and extension of information to the people on services available.

In our educational program we particularly urge that state associations do their utmost to reactivate and revivify the county societies. The vast majority of these are poorly attended and the members are indifferent to the problems that beset us. No education of the public can be successful unless the profession also is fully educated.

II. Those primarily calling for positive legislation or administrative action by governmental agencies. This includes items 2, 6, 7, 9, 10, 11, 13 and 14; namely, extension of public health service for the prevention of disease; surveys to determine our needs, with these surveys continuous so that our remedies may keep pace with our necessities; the setting up of proper diagnostic facilities where lacking; federal aid where local communities cannot finance their necessary activities, but the activities to remain under local control; the readjustments in personnel requirements of the services; the necessary relocation of physicians, and necessary changes in the draft regulations.

III. Those calling for positive action but not as a rule legislative action. This includes items 3, 4 and 5; namely, extension of hospital and medical insurance on a voluntary basis, already of proved value, to cover the country; and the use of this principle in caring for the indigent.

IV. The one item calling for negative action, namely item 12. This refers to the Wagner-Murray-Dingell bill and other types of vicious legislation.

Finally, just as we have in our program recommended surveys of our medical facilities so that they may be kept up to the best possible level, so the Board of Trustees and the Council on Medical Service and Public Relations should continuously survey the constructive program for medical care and likewise keep it constantly up to date so that it will stay at least even with and, if possible, a step ahead of the needs of the public.

Clinical Notes, Suggestions and New Instruments

SUBCUTANEOUS OR EXTRAPERITONEAL GALLBLADDER

(A REPORT OF AN UNUSUAL CASE)

ROCKWOOD W. BULLARD JR., M.D., CHICAGO

Anomalies of the biliary system have frequently been reported in the past fifty years and there have been a few cases of unusual location of the gallbladder.¹ It has been found in hernial sacs, found floating on a long mesentery within the abdomen and found completely buried in the substance of the liver. There have been a few reported cases of spontaneous biliary fistula through the abdominal wall with extrusion of gallstones.

Early in 1945 at the Presbyterian Hospital of Chicago I operated on a gallbladder which lay directly beneath the skin and on top of the abdominal muscles. A search of the literature has failed to reveal a similar history and for that reason this case would seem to be unique.

The patient was a woman aged 81 who appeared in the clinic with the complaint of a painless mass in the upper right abdomen, which had grown during the previous two years. She had always been in good health and had never had indigestion, pain associated with eating, or jaundice. The mass appeared beneath her ribs two years before, gradually increasing in size and growing more rapidly in the past year.

The tumor appeared to be attached to the underlying muscle, was firm and was not tender. A preoperative diagnosis of a fascial sheath tumor was made and under local anesthesia the mass was removed.

It was lying on the internal oblique muscle and split the fibers of the external oblique. At the upper end of the mass there was a strand of fibrous tissue which split the fibers of

the internal oblique and transversalis muscles. This was found to contain a lumen, and a probe could be inserted to a depth of 3 cm. A brownish liquid appeared. This was interpreted as being a bile duct and several small stones were removed. This tumor was not contained in a hernia sac.



Fig. 1.—Subcutaneous gallbladder under right costal arch.

The tumor was then removed with a small portion of the external oblique muscle. The internal oblique and transversalis were then retracted and the peritoneum incised; a finger placed in the abdominal cavity could palpate a small, tubulized structure which was interpreted as being the cystic duct. A catheter was placed in this duct, the external oblique and skin were closed and the patient was returned to the ward.



Fig. 2.—Specimen from patient shown in figure 1 cut open, showing gallbladder containing stones.

Injection of diodrast through the tube confirmed the belief that we were dealing with the cystic duct. When it was opened, the tumor was found to contain a brown stained mucus and numerous faceted gallstones. Microscopic section of the wall of the tumor showed that we were dealing with the gallbladder.

The patient was allowed out of bed the following day, drained nothing from her tube and subsequently made an uneventful recovery.

1. From the Surgical Service of the Presbyterian Hospital.
1. Gross, R. E. Congenital Anomalies of the Gallbladder. *Arch. Surg.* 32:131 (Jan.) 1936. Gould and Pyle. *Anomalies and Curiosities of Medicine*. Philadelphia, W. B. Saunders Company, 1926. Cwern, E. W.: Herniated Fungus Opened Through Skin Incision. *Minnesota Med.* 10:741 (Nov.) 1916.

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SATURDAY, DECEMBER 1, 1945

THE PRESIDENT'S NATIONAL HEALTH PROGRAM AND THE NEW WAGNER BILL

Last week THE JOURNAL published the message sent to Congress on November 19 by President Harry S. Truman submitting a National Health Program. On the same day Senator Wagner of New York introduced for himself and Senator Murray Senate S. 1606, and Congressman Dingell introduced into the House the same version of the new Wagner-Murray-Dingell bill. Obviously a number of conferences between those interested must have preceded the coordinated action that occurred. Senator Wagner accompanied his introduction of the measure with another opening statement, a brief summary of the health provisions and a long series of questions and answers about the prepaid medical care provisions of the National Health Act of 1945. The language of the President in his message to the Congress and of Senator Wagner in his statement to the Senate and the language of the measure itself are the same trite locutions that the advocates of federal compulsory sickness insurance have used for these many years in trying to force these proposals on the American people. According to Arthur Sears Henning, "the compulsory health insurance plan is chiefly the brain-child of Isidore S. Falk, research director of the Social Security Board, and Michael M. Davis, a member of the C. I. O. Political Action Committee."

Elsewhere in this issue appears an analysis by the Bureau of Legal Medicine of the American Medical Association of the changes in the latest version of the Wagner-Murray-Dingell bill from that introduced previously. Mr. Wagner in his opening statement again informs the Senate that this bill is the result of the constructive suggestions of many outstanding medical authorities and of labor, farm, consumer and health organizations interested in improving the nation's health. Neither the President nor Mr. Wagner nor the Social Security Board made the slightest attempt to consult any representatives of the American Medical Association,

which now embraces in its membership more than 125,000 American physicians. Typical of the kind of government that the bureaucrats would force on the American people is this technic of consulting advisers who are known in advance to be in complete agreement with the persons whom they are supposed to advise and of studiously avoiding any one who might offer a contrary opinion. This is government by minority with a vengeance.

The insidious strategy that has been employed in recent years, leading toward culmination by approval of the President of the United States, is clearly apparent to those with an understanding of what has been going on. Since the time when Michael Davis and his associates engineered the formation of the Committee on the Costs of Medical Care down to the present, a gradual enlistment has been secured in behalf of socialized medicine of every agency that could be induced to combine in a movement toward socialization of the American system of government. Around their banner have rallied the members of the so-called Boas' Physicians Forum, certain doctors of philosophy in the field of economics and sociology, the socialistic element in the American Public Health Association and those employed in governmental health agencies who thirst for increased power and expansion of the bureaus that they serve. Let the people of our country realize that the movement for the placing of American medicine under the control of the federal government through a system of federal compulsory sickness insurance is the first step toward a regimentation of utilities, of industries, of finance and eventually of labor itself. This is the kind of regimentation that led to totalitarianism in Germany and the downfall of that nation. Its prime consideration is deduction from the pay of the worker and taxation of the employer so that the government does for the people most of the things that our people in the United States have been accustomed to do for themselves. The time may yet come when the American worker, as was the case with the German worker, will have more deductions from his wages than "take home" pay.

"SOCIALIZED MEDICINE" AND FREE CHOICE

In the President's message to the Congress and in the material written for Mr. Wagner by those whom he employs and consults in the preparation of his proposals, constantly reiterated is the statement that these proposals are not "socialized medicine." The first of Mr. Wagner's questions and answers is concerned with this question in semantics. Worse than socialized medicine is "state medicine." In any system of state medicine the government collects the funds available, manages the service and distributes the payments. Is not this what the Wagner-Murray-Dingell bill would accomplish? True, in the proposed legislation for a federal system of compulsory sickness insurance, patients are told that

they will have free choice of doctors; doctors are told that they will have the right to refuse any patients; but the bill provides that the Surgeon General can limit the number of patients that a physician will see, and that the Surgeon General will provide other physicians when too many patients select one or more of the physicians in a community. The measure mentions free choice of doctor for the patient, but it is free choice within limitations. It is free choice of the doctors who are willing to work under the system. It is free choice if the doctor is willing to work under a fee bill set up by the government. It is free choice if the doctor is willing to accept a payment of so much per person per year for his services. It is free choice if the doctor is willing to work as a salaried member of a group. It is free choice if the doctor is willing to abide by a majority vote of the doctors licensed to practice in his community. What kind of free choice is that?

Senator Wagner has always insisted that compulsory health insurance—really sickness insurance—is not socialized medicine. Actually the proposals involve both socialized medicine and state medicine. The American people are entitled to straightforward, honest statements from their representatives as to what such proposed measures would do to them and to their physicians. They have not had such a straightforward statement either from the President in his message or from Senator Wagner in his statement to the Congress.

THE STATISTICS

In opening his message to the Congress, President Truman referred again to the rejections of registrants under the draft and to the rejections of women who applied to the Women's Army Corps and other women's services. Every fundamental principle of the scientific interpretation of statistics has been violated by the proponents of federal compulsory sickness insurance in their utilization of these figures as propaganda for the measures they propose. The facts have been provided in several previous editorials in *THE JOURNAL*. One needs only to recognize that the standards of physical fitness for military service changed greatly from the army of preparedness to the end of the war. Men who were rejected as physically unfit for military service in the first year of war were accepted as quite fit for complete service or for limited service in the later years of the war. Furthermore, none of the proponents of this legislation have ever admitted frankly, as they should if they are interested in an honest scientific statement of the facts, that a tremendous number of those rejected as unfit could not be made more fit by any knowledge available to modern medicine today.

In his questions and answers presented to the Congress, Senator Wagner again challenges the statement

that health conditions and standards of medical service in the United States are higher than in any other large country in the world. Here are more "tricks" with words. The figures for New Zealand have often appeared better than those of our country, but New Zealand is quite different from the United States and not in any sense of the word comparable. And even if it were comparable, the statistics for New Zealand concern its white European population and carefully avoid citation of its colored and native population. As we go to press New Zealand's system of socialized medicine reportedly faces failure and bankruptcy. Mr. Wagner even challenges the figures for life expectancy in the United States. Let him consult the most recent figures prepared by the leading life insurance companies in this country, which have a financial stake in the life expectancy of the people; he will discover how far ahead the United States really is of any other country in the world with or without a national compulsory system of medical care.

FEDERAL AID FOR HOSPITALS

The President's program includes five features. First is the proposal to grant federal aid for the building of hospitals and health centers throughout the nation. Both the American Medical Association and the American Hospital Association have approved the principles of the Hill-Burton bill, which make this proposal effective. Senator Wagner in his statement to the Congress reminds us that he himself introduced a hospital construction bill in 1940. He has now eliminated from the new Wagner-Murray-Dingell bill the section in the previous draft which concerned hospital construction. This at least is fortunate for the American people because the provisions of the Hill-Burton bill, as modified by the Senate committee which conducted the hearings and which has reported the bill favorably to the Senate, are much more wise and much more scientific than the proposals of Wagner, Murray and Dingell. Under the Hill-Burton bill money will not be spent until the need is shown by a survey conducted in the individual state. Furthermore, state organizations will be developed which will have the responsibility for allocation of funds and the control of the expenditure of funds. The place of the federal government will be to act as custodian of the funds and to provide the funds when adequate evidence of their need and proper utilization is supplied. Incidentally, this measure recognizes that some areas of the country may need funds much more than do others, and beyond the ability of the individual state to match any federal appropriation.

MATERNAL AND CHILD HEALTH SERVICES

The second recommendation by President Truman is for an expansion of maternal and child health services. Apparently President Truman failed to take into account

the pending Pepper bill for maternal and child health, which was analyzed in an editorial published in *THE JOURNAL* on November 10. Senator Wagner in his statement to the Senate does recognize the existence of other proposals. The Wagner-Murray-Dingell bill would make increased grants-in-aid through the Children's Bureau to the individual states for maternal and child health and crippled children, the states developing their own plans, which, of course, would have to have the approval of the chief of the Children's Bureau. Here the grants are made variable according to the established need in the individual states. The Wagner-Murray-Dingell bill requires that the chief of the Children's Bureau enter into agreements or cooperative working arrangements with the Surgeon General of the Public Health Service to insure coordination in the administration of programs and services in this field. This at least is a recognition of the fact that federal coordination of health activities is a fundamental need in our government at this time. The Congress will soon give authority to the Chief Executive to transfer various agencies in order to secure coordinated action and to bring about unified policies. The American Medical Association has recommended again and again and again that the number one step necessary in coordination of health activities is removal of the Children's Bureau from the Department of Labor to the United States Public Health Service in the Federal Security Agency. Previous presidents have apparently been unable to accomplish this highly desirable objective. The American Medical Association favors the utilization of federal or state funds for the extension of maternal and child health services where needed.

President Truman also urges an extension of public health services throughout the United States. At present less than half the counties in the United States are provided with full time public health service. Perhaps some of our counties could never utilize a full time public health service efficiently; groups of counties could, of course, cooperate. Nevertheless the American Medical Association has been among the leaders of the nation in urging that adequate public health service be made available in every community in our country.

EDUCATION AND RESEARCH

Confusion again prevails when the proposals of the President's message and of the Wagner-Murray-Dingell bill are read in connection with the proposals of the various measures for establishing a National Science Foundation. This Mr. Wagner recognizes in his statement to the Congress; he points out that the Senate Committee on Military Affairs has before it legislation providing for the promotion of medical research and professional education. He indicates that these proposals remain in his revised National Health Act because

he wants to help promising individuals without financial means to get a medical education, and he wants to overcome "the restrictions which the medical schools apply particularly to persons of minority groups." For these purposes the sums of \$10,000,000 the first year and \$15,000,000 the second year are mentioned. Incidentally, the Senator wisely recognizes the necessity for training adequate personnel in the field of public health if progress is to be made in that field. Nevertheless the Congress would do well to place in some single agency all of the various programs allocating funds for training personnel in the field of research, medicine, the public health, the basic medical sciences and related fields of study. Scientists throughout the nation are agreed on the desirability of a National Science Foundation. Physicians favor increased research on cancer and on mental disease and indeed in every medical field in which research could be helpful. They do feel, however, that any National Science Foundation should be directed by a competent board of scientists, who could coordinate research and education. Apparently the present administration seems to prefer a National Science Foundation which would be headed by a politically appointed director. Apparently Wagner, Murray and Dingell seem to prefer a system in which the Surgeon General of the United States Public Health Service would allocate funds to medical schools, research institutions and similar agencies that meet his approval. The movies have a czar who directs and coordinates their activities in certain fields, but they can remove him when they wish to do so and they are free to resign from his support when they wish to do so. Similarly baseball has its czar. Now apparently our government wants a czar for medicine and another czar for research, but there is no way in which those who would be compelled to subscribe for the establishment of the system and for those who would be compelled to work under the system to resign. Their freedom would become a thing of the past.

Incidentally, in his statement on medical research and education, Senator Wagner has one quite revolutionary paragraph. Under the Constitution of the United States the control of medical practice is within the province of the individual states. Here is the statement of Senator Wagner:

State licensure laws are so complex, so lacking in uniformity and so obstructive of interstate mobility of qualified practitioners that some federal legislation is necessary to bring order out of this chaos. There are no medical schools in some states, and measures to remedy this defect should be considered. Finally, the discrimination which most medical schools practice against student applicants from minority groups requires congressional consideration and appropriate action.

Regardless of whether or not some of the abuses to which the Senator refers exist, the Senator finds only one possible remedy—compulsion by the federal govern-

ment and removal from the individual states of their right to control their own policies. Furthermore, has he made the slightest possible investigation to find out whether or not every state in the United States can support and operate successfully a modern medical school? Has he considered the necessity for teachers, for pupils, for patients? One is reminded of the state which built with federal funds a hospital for crippled children that exhausted the needs of a hospital for crippled children in that state within two years.

COMPENSATION FOR LOSS OF EARNINGS DUE TO SICKNESS

The fifth proposal in the President's program and in Senator Wagner's measure is compensation for loss of earnings due to sickness. The American Medical Association through its House of Delegates has consistently favored such insurance. Most strange among the changes in the present measure offered by Wagner, Murray and Dingell from their previous promulgation is the failure to indicate anywhere in the proposed measure the taxation to be provided on the worker and on the employer to provide funds for this measure. True, the President in his message mentions 4 per cent on the first \$3,600 earned by an employee, but the measure itself makes no such mention. Perhaps the mention was avoided deliberately by Senators Wagner and Murray and by Congressman Dingell so that the bill could be referred to the Senate Committee on Education and Labor, of which Senator Murray is chairman, rather than to the Senate Committee on Finance, to which the previous measure was referred. This may serve to secure hearings on the legislation and thus to keep it alive rather than to permit it to sink into the innocuous desuetude that was the fate of the previous measure.

EVILS OF COMPULSORY SICKNESS INSURANCE

Many of the answers included by Senator Wagner in the questions and answers submitted by him to the Senate are denials of the charges repeatedly made against his proposals by those who wish to see the principles of initiative, democracy and freedom maintained in American medicine. Thus he categorically denies that his measure "will destroy the private practice of medicine," that it will place the medical profession "under the direction of one man, the Surgeon General of the United States Public Health Service," that "the National Advisory Medical Policy Council will have no authority," that "the hospitalization provisions in the bill" will "destroy the voluntary hospital system," that "medical education will be controlled by the Surgeon General," that "the bill will plunge the physicians into political slavery," that "people will be obliged to take any doctor the Surgeon General tells them to," that "the Surgeon General of the Public Health Service" will

have "the power and authority to designate which doctors can be specialists." The Senator by sophistic argument and smooth phrases categorically denies all of these charges against this measure; THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION now insists that every one of these charges against the measure is valid and that the actual text of the measure itself is the proof of that validity.

No one will ever convince the physicians of the United States that the Wagner-Murray-Dingell bill is not socialized medicine. By this measure the medical profession and the sick whom they treat will be directly under political control. By this measure the great system of private hospitals and community hospitals that have grown up in our country will depend for their continued operation on funds paid to them by a federal government agency. By this measure the philanthropic efforts for the care of the sick, which have been the pride of our nation, will be forever deterred. Through this measure competent young men who would enter the medical profession will be forced to seek other fields of action still remaining under our democracy which still permit the exercise of individual initiative and freedom of thought and action. By this measure doctors in America would become clock watchers and slaves of a system. Now, if ever, those who believe in the American democracy must make their belief known to their representatives, so that the attempt to enslave medicine as first among the professions, industries or trades to be socialized will meet the ignominious defeat it deserves.

BACITRACIN, A NEW ANTIBIOTIC

In a study of the bacterial flora of contaminated wounds, Johnson and his associates¹ of the departments of surgery and biochemistry, Columbia University College of Physicians and Surgeons, found that pathogenic micro-organisms appeared at times on blood agar plates following direct plating of the injured tissues; these were not demonstrable in broth cultures made at the same time from the same material. This occurred most frequently when the broth cultures contained nonpathogenic contaminants of the *Bacillus subtilis* group. Many of these contaminants had an inhibiting action on subsequent platings with gram positive cocci, one strain being of particularly high antibiotic titer. The active principle of a cell free filtrate from this strain has been named "bacitracin" by the Columbia University investigators.

"Bacitracin" is formed by surface growth of this strain on a variety of liquid mediums but not in submerged growths, the maximum titer being reached after

1. Johnson, Ballena A.; Anker, Herbert, and Meloney, F. L.: *Science* 102: 376 (Oct. 12) 1945.

three to five days' incubation at 37 C. This antibiotic is insoluble in ether, chloroform, acetone or ethyl acetate but can be extracted from broth cultures with normal butanol. Evaporation of the butanol extract by steam distillation in vacuo results in a grayish white powder.

"Bacitracin" thus prepared is a neutral substance not precipitable by manipulating the p_H . In this it differs from other earlier antibiotics.² The substance is water soluble and coctostable. It is nonhemolytic for human or sheep erythrocytes and resists digestion with pepsin or trypsin. The substance is nontoxic on intraperitoneal or intravenous injection into laboratory animals or on subcutaneous injection into human volunteers. It is nonirritating when applied to the human conjunctiva.

A tentative standard "unit" of bacitracin was adopted by the Columbia University surgeons, an amount which diluted 1,024 times and added to 2 cc. of beef infusion broth will completely inhibit the growth of a stock culture of hemolytic streptococci. This is apparently about 500 times the Oxford unit used in standardization of penicillin. Adopting this unit, the material obtained by harvesting from a synthetic culture medium at times assays as high as 10 Columbia units per cubic centimeter (the equivalent of 5,000 Oxford units). This abundant yield would be of trade interest if the new product should be produced commercially.

The new antibiotic is active against a wide range of pathogenic micro-organisms. From 0.001 to 0.002 Columbia unit gives complete bacteriostasis with standard suspensions of pneumococci, hemolytic streptococci and *Clostridium welchi*. Slightly larger doses are required for complete inhibition of *Clostridium histolyticum*, gonococci and meningococci. *Escherichia coli* and *Proteus vulgaris* are not inhibited.

In vivo protection tests have been made on mice injected intraperitoneally with 10,000 minimum lethal doses of hemolytic streptococci. If this inoculation is followed at three hour intervals for thirty-six hours by subcutaneous injections of 1 unit of bacitracin, approximately 90 per cent of the injected mice survive. The control mortality is 100 per cent. Guinea pigs similarly injected with multilethal doses of *C. welchi* or *C. septicum* are 100 per cent protected by repeated subcutaneous injections of bacitracin.

Thus far bacitracin has been used locally to treat a number of human infections due to hemolytic streptococci and staphylococci. The results are equal to the response in similar cases to local penicillin therapy. Attempts are now being made to produce bacitracin by large scale commercial methods. If successful, the new antibiotic should be much cheaper than penicillin.

Current Comment

TREATMENT OF PEPTIC ULCER WITH AMINO ACIDS

A recent report by Co Tui and his co-workers¹ from several departments of the New York University College of Medicine presents some rather astonishing results from the treatment of patients with peptic ulcer by high amino acid feedings. Twelve patients with duodenal ulcer, 5 with combined duodenal and gastric ulcer, 7 with gastric ulcer, 1 with suspected marginal ulcer and 1 with radiologically confirmed marginal ulcer were placed on feedings at two hour intervals of dextrin-maltose and a preparation made by hydrolyzing amino acids. Included in the group were the 4 original patients with peptic ulcer who were given the treatment prior to contemplated gastrectomy. The mixture fed contained from 0.5 to 0.8 Gm. of nitrogen and 40 to 50 calories per kilogram of body weight in twenty-four hours. The length of the ulcer history varied from one month to twenty years; 14 were "intractable" cases, as defined by symptoms which had not improved after complete bed rest and strict Sippy treatment for a period of one to five weeks. There were 27 cases in which pain or epigastric distress was the persistent symptom; this stopped in twenty-four hours in 14 and in forty-eight hours in 13. Vomiting, a symptom in 13 cases, stopped immediately after the institution of a diet in 6. Occult blood was present in 15 cases and disappeared within one week. The New York investigators believe that the prompt improvement manifest in these cases appears to be due to the protein hydrolysate, which is simultaneously an antacid and an easily assimilable food which can be built into the tissue. In the course of this work the protein deficiency was demonstrated in a large percentage of patients with peptic ulcer. The treatment, they point out, does not insure against recurrences when the patient reverts to old dietary habits. Although the number of cases is small and the period of observation short, this therapeutic and supportive use of high caloric and high amino acid feedings deserves to be studied extensively by other qualified investigators.

CONGRESS ON MEDICAL EDUCATION

The Council on Medical Education and Hospitals has announced that the Annual Congress on Medical Education and Licensure will be held at the Palmer House in Chicago on Feb. 11 and 12, 1946. This important session will deal primarily with reconversion problems, including the continuation education of physician veterans, the relocation of physicians and the transition to a peacetime educational program in medical education. Medical educators, licensure authorities, specialty boards and many other groups find these annual meetings of great value. It is particularly important that hotel reservations be made without delay.

1. Co Tui, Wright, Arthur M.; Mulholland, J. H.; Galvin, T.; Barcham, I. and Gerst, G. R.: The Hyperalimentation Treatment of Peptic Ulcer with Amino Acids (Protein Hydrolysate) and Dextrin-Maltose, *Gastroenterology* 5:5 (July) 1945.
2. DuBos, R. J.: *J. Exper. Med.* 70:1 (July) 1939. Jansen, E. F., and Hirschmann, D. J.: *Arch. Biochem.* 4:297 (July) 1944. Ganse, G. F., and Brazini Kova, M. G.: *Am. Rev. Soviet Med.* 2:134 (Dec.) 1944.

MEDICINE AND THE WAR

ARMY

INTERNAL MEDICINE CONFERENCE AT LETTERMAN GENERAL HOSPITAL

A conference on internal medicine was recently held at the Letterman General Hospital, San Francisco, under the direction of Brig. Gen. Charles C. Hillman, commanding general of the hospital, and was attended by medical chiefs, consultants and surgeons of various hospitals and service commands. Brig. Gen. Hugh J. Morgan, chief consultant in medicine, represented the Office of the Surgeon General and spoke on the role of medicine in the Pacific war, and Major Clarence Livingood, consultant in dermatology, took part in a panel discussion of diphtheria and lichenoid and allied skin diseases.

McCLOSKEY GENERAL HOSPITAL CITED

The Meritorious Service Unit Plaque was recently awarded to the 1884th Service Command Unit, McCloskey General Hospital, Temple, Texas. By command of Lieut. Gen. Walton H. Walker, commanding general of the Eighth Service Command, the hospital unit is cited "for outstanding devotion to duty, achievement and maintenance of a high standard of discipline from Jan. 1, 1944 to July 1, 1945. As a result of their outstanding devotion to duty, the hospital motto 'Kindness, Happiness and Efficiency' has become a living thing in the minds of patients."

QUALIFIED RESERVE OFFICERS TO RECEIVE PROMOTION

Qualified reserve officers who have not yet received a promotion while on active duty will receive one promotion as they are separated, the War Department recently announced. To be eligible for this promotion, the officer must have served two years in his present rank since Sept. 16, 1940 and must have an efficiency rating of at least 35. This does not apply to promotion above the rank of colonel.

ARMY AWARDS AND COMMENDATIONS

Captain Robert S. Peers

The Bronze Star was recently awarded to Capt. Robert S. Peers, formerly of Oakland, Calif., for meritorious achievement in connection with military operations against the enemy at Leyte, Philippine Islands, from April 30, 1945 to Sept. 2, 1945. "Captain Peers as dispensary surgeon was responsible for the sanitation and medical service for headquarters of a major command. Through his unstinting efforts he maintained an exceptionally high degree of professional medical care and was available at all hours of the day or night. By his patient, sympathetic and therapeutic ministrations he gained admiration and esteem of the men in his unit as well as his patients. Through his efficiency, insistence on sanitary and preventive medical measures and careful attention to duty at all times, Captain Peers contributed greatly to the maintenance of health and morale of this headquarters. His performance of duty was such as to reflect great credit on himself and was in keeping with the best traditions of the military service." Dr. Peers graduated from McGill University Faculty of Medicine, Montreal, in 1930 and entered the service Sept. 9, 1942.

Captain Theodore W. Cooney

The Bronze Star was recently awarded to Capt. Theodore W. Cooney, formerly of Helena, Mont. The citation states that he was awarded the bronze star "for distinguishing himself by meritorious service in connection with military operations against an enemy of the United States from July 4, 1944 to May 8, 1945 in France, Luxembourg, Belgium and Germany.

Captain Cooney consistently demonstrated outstanding ability, initiative and skill in the accomplishment of his duties as battalion surgeon. His medical skill, devotion to duty and personal attention to the officers and men proved a material contribution to the *esprit de corps*, combat efficiency, health and welfare of his engineer combat battalion under the severest combat conditions and is worthy of the highest praise." Dr. Cooney graduated from St. Louis University School of Medicine in 1941 and entered the service July 1, 1942.

Major Burdette J. Buck

Major Burdette J. Buck, formerly of Hartford, Conn., was recently awarded the Bronze Star. Dr. Buck was cited for meritorious achievement in support of combat operations against the enemy on the island of Negros in the Philippines, where he served as chief of medical service in the 37th Hospital. He assumed command of the organization June 1, 1945. Dr. Buck graduated from Harvard Medical School, Boston, in 1926 and entered the service in August 1942.

Captain Edgar G. Ingalls Jr.

The Bronze Star was recently awarded to Capt. Edgar G. Ingalls Jr., formerly of Minneapolis, for "heroic achievement" in connection with operations against the enemy in the battle of Leyte on Nov. 19, 1944, while in command of Company E of the same battalion. Dr. Ingalls graduated from the University of Minnesota Medical School, Minneapolis, in 1942 and entered the service July 1, 1942.

Lieutenant Colonel Luis A. Passalacqua

The Legion of Merit was recently awarded to Lieut. Col. Luis A. Passalacqua, formerly of Ponce, Puerto Rico, for "meritorious conduct in the performance of outstanding services from Nov. 17, 1943 to Oct. 1, 1945." Dr. Passalacqua graduated from George Washington University School of Medicine, Washington, D. C., in 1925 and entered the service Oct. 15, 1940.

Capt. Jack G. Blackstone

Capt. Jack G. Blackstone, formerly of Indianapolis, was recently awarded the Bronze Star and one Oak Leaf Cluster for "exceptional medical skill and courage in caring for the wounded while under fire." Dr. Blackstone graduated from the Indiana University School of Medicine, Indianapolis, in 1942 and entered the service Jan. 27, 1944.

Captain Thaddeus J. Valenski

Capt. Thaddeus J. Valenski, formerly of Thompsonville, Conn., recently received an American citation for his service throughout the Italian, French and German campaigns. Dr. Valenski graduated from Tufts College Medical School, Boston, in 1937 and entered the service Sept. 29, 1942.

Major Phil Bleecker

Major Phil Bleecker, formerly of Memphis, Tenn., was recently awarded the Bronze Star "for meritorious achievement during the Italian campaign." The award was in relation to special work in the study of malaria. Dr. Bleecker graduated from the University of Tennessee College of Medicine in 1936 and entered the service June 28, 1941.

Lieutenant Colonel John D. Hughes

The Legion of Merit was recently awarded to Lieut. Col. John D. Hughes, formerly of Memphis, "for outstanding service from Nov. 10, 1943 to March 24, 1945 with the Medical Corps in Italy." Dr. Hughes graduated from the University of Tennessee College of Medicine, Memphis, in 1935 and entered the service July 10, 1941.

MISCELLANEOUS

WARTIME GRADUATE MEDICAL MEETINGS

The following subjects and speakers for Wartime Graduate Medical Meetings have just been announced:

California

Birmingham General Hospital, Van Nuys: Recent Developments in Diabetes, Dr. Howard F. West, December 12; Neurosurgery, Capt., Everett Dickinson, December 26.

U. S. Naval Hospital, Corona: The Streptococcus Problem, Lieut. Comdr. George R. Underwood, December 15; The Use of Products of Fibrinogen and Thrombin in Otolaryngology, Capt. Harry P. Schenck, December 27.

A. S. F. Regional Station Hospital, Oakland: Nephritis, Dr. Thomas Addis, December 12.

U. S. Naval Hospital, Long Beach: Low Back Pain, Major Samuel Weaver, December 19.

Station Hospital, Camp Stoneman, Pittsburg: Diagnosis and Treatment of Abnormal Mechanisms of the Heart, Dr. William J. Kerr, December 15.

Illinois

Station Hospital, Camp Grant: The Treatment of Hypertension by Both Medical and Surgical Means, Dr. Chester M. Kurtz, December 12.

Regional Hospital, Chanute Field, Rantoul: Chronic Disabilities of the Shoulder Region, Dr. Arthur Steindler, December 12.

Station Hospital, Fort Sheridan: Psychosomatic Orientation, Capt. Charles O. Sturdevant, December 12.

Gardiner General Hospital, Chicago: History and Development of Blue Cross Plans, Dr. C. Rufus Rorem, December 5; Section of Vagus Nerves to the Stomach and Treatment of Gastroduodenal Ulcer, Dr. Lester Dragstedt, December 12; Degenerative Lesions of the Nervous System, Dr. LeRoy H. Sloan, December 19.

Mayo General Hospital, Galesburg: Gallbladder Disease, Dr. Warren H. Cole, December 19; The Psychosomatic Problem as Seen from the Point of the Internist, Sidney A. Portis, December 22.

Indiana

Billings General Hospital, Fort Benjamin Harrison: Dermatitis Medicamentosa and Dermatitis Due to Local Irritants, Dr. Francis E. Senear, December 11.

Wakeman General Hospital, Camp Atterbury: Ménière's Disease, Dr. John R. Lindsay, December 12.

Tennessee

Kennedy General Hospital, Memphis: Diagnosis of Bronchogenic Carcinoma, Dr. Robert G. Bloch, December 14.

Wisconsin

Station Hospital, Camp McCoy: The Biochemical Investigation of the Malarial Parasite, Dr. E. A. Evans, December 5; Infectious Hepatitis, Dr. William Middleton, December 12; Recent Advances in Endocrinology, Dr. W. O. Thompson, December 19.

Station Hospital, Truax Field, Madison: Clinical Significance and Management of Anemias, Dr. F. W. Madison, December 5; Nerve and Tendon Injuries, Dr. Sumner Koch, December 19.

UNRRA NEWS

Campaign to Stamp Out Malaria in Italy

According to a recent announcement from the Italian UNRRA mission, the Italian people are cooperating wholeheartedly in the campaign being waged by their government and the United Nations Relief and Rehabilitation Administration to stamp out malaria and other diseases by killing mosquitoes and other insects.

In the small commune Pomezia, during the past summer, most of the population of 4,500 were stricken with malaria. It was necessary to spray more than 20,000 acres of land with

DDT to destroy mosquitoes. Homes in the area also were sprayed. At Formia, Fondi, Minturno and Scauri, in Latina province, more than 2,500 homes were disinfested. At Fondi, instead of spraying individual homes, the workers tried an experiment of spraying two large concentric circles around the town itself to erect a poison barrier to mosquitoes breeding outside.

The Pontine marshes, a malarial poison spot once drained by the Italians, had been flooded again by the retreating Germans and the old mosquito-breeding tendencies restored. Allied military authorities did the initial drainage work of restoring pumping stations, removing canal obstructions, repairing bridges, removing mines and "dusting" the marshes with paris green poison from airplanes. UNRRA arranged for the use, by the Italian government, of 7½ million lire to continue the work. It was also requested to lend personnel and equipment to disinfest certain areas which had been missed previously.

UNRRA also gave extensive help with supplies, equipment and supervision in spraying of homes and animal shelters in a 29,000 acre area at Aprilia and in 700 homes at Cassino. Plans are under way for DDT treatment of an afflicted zone in Siracusa which necessitates the spraying of 10,000 homes.

VETERANS

VETERANS ADMINISTRATION TO ASSUME CONTROL OF PROSTHESES

At a recent news conference the following major points were developed by Major Gen. Paul R. Hawley, acting surgeon general of the Veterans Administration:

1. The Veterans Administration will take over on Jan. 1, 1946 all of the development and research work being conducted on prosthetic and sensory devices (artificial limbs, hearing aids, dentures and so on) by the Office of Scientific and Research Development, a wartime agency which is scheduled to go out of existence December 31. In addition, the Veterans Administration will assume on Jan. 1, 1946 the Army's experimental work in these fields in connection with the OSRD and the National Academy of Sciences.

2. This means that the Veterans Administration will become the central federal agency for all research and development work on prosthetic appliances, a step that has been advocated by some congressional and other sources, so that all government as well as outside agencies may benefit from the results of a unified program.

3. Arrangements are now being made with the Bureau of the Budget to transfer the existing research contracts, effective Jan. 1, 1946, to the Veterans Administration so that this work may be continued on an uninterrupted basis. It is estimated that the work will require \$1,000,000 per year.

4. The original research and development work on artificial limbs and other prosthetic and sensory devices was initiated through a Special Committee on Prosthetic Devices headed by Dr. Paul E. Klopsteg. It was established by the National Research Council on March 20, 1945 to conduct an intensive campaign in this field, which resulted in many excellent results. In addition to the OSRD program, the Veterans Administration has been conducting limited experimental and development work at its hospital in the Bronx, New York.

5. It is emphasized, however, that the permanent research and development program is concerned only with the long-range future aspect of the problem. In other words, it seeks to develop the best and most modern appliances and does not include instruction as to their actual and immediate usage.

6. To meet this vital phase of the problem, the Veterans Administration has formulated plans for an immediate research and educational program to teach the disabled veteran to use artificial limbs or other prosthetic and sensory appliances properly as quickly as possible. Leading specialists in this field will be employed to supervise the activities. A formal announcement will be made as soon as key personnel have been selected to head the program.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

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Cooley, Beamon S. Jr., Major, 1322 N. 31st St., Birmingham.
Holman, Norman W., Capt., Ozark.
Robinson, Edward B. Jr., Major, TCI Hosp., Fairfield.
Teasley, Gerald H., Lt. Col., 701 E. Pryor, Athens.
Welch, Oliver W., Capt., 506 Norfolk Lane, Birmingham.
Williams, James C., Capt., % Mrs. W. W. Williams, Atmore.

Arizona

Wheeler, Norman O., Capt., 604 S. 2d St., Globe.

Arkansas

Chamberlain, Warren W., Lt. Col., 34 Ramble Rd., Hot Springs.
Heinemann, Sol, Capt., 510 Walnut St., Newport.
Hosmer, Silas R., Capt., Vet. Hosp., Fayetteville.
Reagan, Charles H., Major, Marked Tree.
Regnier, Waldo A., Major, 145 Main St., Crossett.
Schiirmer, Roy E., Capt., % Health Dept., Fort Smith.

California

Abbott, Charles G., Capt., 360 W. Elk St., Glendale.
Althouse, Hugh C., Capt., 1401 S. Hope St., Los Angeles.
Arnold, Ferris L., Major, 110 Pine Ave., Long Beach.
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Bolton, Warren F., 1st Lt., 139 S. Boyle Ave., Los Angeles.
Bradley, William G., Major, 7755 Jellico Ave., Northridge.
Bramble, Russell B., Lt. Col., Gen. Del., S. San Francisco.
Bronstein, Louis J., Capt., Dos Palos.
Bryner, Sergius, Capt., 1127 Johnson Ave., Menlo Park.
Covel, Martin B., Capt., U. C. of Hosp., San Francisco.
Du Brow, Aaron A., Major, Community Hosp., Long Beach.
Finocchiaro, Cirino, Capt., 1506 W. Vernon Ave., Los Angeles.
Friedrich, Leland E., Capt., 2701 14th Ave., Oakland.
Gilmore, William L., Capt., 1494 7th Ave., San Francisco.
Gump, Millard E., Major, 694 Haddon Rd., Oakland.
Hendricks, Coleman B., 1st Lt., 1200 N. State St., Los Angeles.
Hittleman, Joseph, Capt., 132 N. Soto St., Los Angeles.
Kittle, W. F., Major, 1027 S. Westmorland Ave., Los Angeles.
Lones, Frank E., Capt., 945 Vine St., Paso Robles.
Lyon, Thomas P., Major, 135 N. Dowdy St., Gilroy.
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Morris, George W., Capt., 4439 35th St., San Diego.
Pettet, Charles H., Capt., 2200 W. 3d St., Los Angeles.
Portalupi, Henry C., Capt., 487 E. Julian St., San Jose.
Rehm, Robert, Capt., Southern Pacific Hosp., San Francisco.
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Robinson, Hewitt H., Col., 1636 High St., Oakland.
Ruby, Carl, Capt., 8125½ Blackburn Ave., Los Angeles.
Schock, Robert H., Capt., Post Office Bldg., Soledad.
Schwarz, Hubert F., Major, 96 Broadmoor, San Anselmo.
Shotwell, Cecil L., Capt., 1422 N. Genesee Ave., Hollywood.
Silverglade, Alexander, Major, Arroyo Del Valle, Livermore.
Silverstein, Bernard, Major, 3787 S. Vermont Ave., Los Angeles.
Stamler, Allan E., Major, 1108 Whitley, Corcoran.
Toma, John J., Major, 6667 Sunset Blvd., Hollywood.
Ward, Henry C., Capt., 1146 Cedar Ave., Long Beach.
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White, Carroll W., Major, 1728 4th St., LaVerne.
Williams, A. J., Lt. Col., 61 San Andreas Way, San Francisco.
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Colorado

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Tice, Frederick G. Jr., Capt., Mt. Harris.

Connecticut

Diskan, Albert E., Major, Manchester.
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Margoliis, Norman C., Major, 127 Grove St., Waterbury.
Scanlon, John J., Major, 230 West Ave., South Norwalk.

Delaware

Stroud, Henry H., Major, RD 1, Scaford.

District of Columbia

Hoffman, Jay L., Lt. Col., St. Elizabeths Hosp., Washington.
Simpson, Robert L., Capt., 400 Argyle Ter. N.W., Washington.
Spence, George R., Capt., The Children's Hosp., Washington.
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Whitaker, L. S. Jr., Capt., 1150 Connecticut Ave., Washington.

Florida

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Hinton, Andrew H., Major, 416 Ingraham Bldg., Miami.
MacColl, William A., Capt., 220 25th St., Bradenton.
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Georgia

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Sullivan, Francis M., Major, Norcross.
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Illinois

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Bendix, Richard M., Capt., 4655 S. Lake Park, Chicago.
Biddlecombe, Duncan, 1st Lt., 109 S. Chestnut, Shelbyville.
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Bowen, Robert E., Major, 1819 W. Polk St., Chicago.
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Braude, Abraham I., Capt., 5543 W. Jackson Blvd., Chicago.
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Carney, Paul W., Capt., 757 S. 3d St., DeKalb.
Cendella, Francis J., Major, 1630 5th Ave., Moline.
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Culmer, Charles U., Major, Passavant Mem. Hosp., Chicago.
Dahl, John J., Capt., 238 N. Pine Ave., Apt. 206, Chicago.
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Einhorn, Harold, Major, Champaign.
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Fair, John R., Capt., Wolf Lake.
Fisk, Kenneth L., Capt., 48 Thorndale Ave., Roselle.
Fitzgerald, Gerald J., Capt., 2232 Central Park Av., Evanston.
Fredrikson, Lynn C., Capt., 2100 Burling St., Chicago.
Freiheit, Harold J., Capt., 1018 Broadway, Highland.
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Grubman, Marvin, Capt., 3730 Dickens Ave., Chicago.
Guerrieri, John A., Capt., 5202 Wolfram St., Chicago.
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Hodges, Clarence V., Capt., 950 E. 59th St., Chicago.
Holmes, George W., Capt., 340 Barry Ave., Chicago.
Horning, Victor H. H., Capt., 1742 New England Ave., Chicago.
Hospers, Cornelius A., Lt. Col., 7245 S. Shore Dr., Chicago.
Johnson, William E. G., Capt., 7811 Euclid Ave., Chicago.
Kimball, Ernest R. Jr., Major, 918 Michigan Ave., Evanston.
Klein, Max E., Major, 2431 N. Nordica Ave., Chicago.
Kobisk, Oliver A., Major, 67 E. Wilson St., Batavia.
Koch, Joseph M., Capt., 1927 Edison Ave., Granite City.
Krawcznski, A. C., Capt., 6044 S. Fairfield Ave., Chicago.
Kunde, Emerson C., Major, 726 Washington St., Woodstock.
Kurtz, James F., Major, 7147 Harvard Ave., Chicago.
Kushner, Abraham, Capt., 2037 Howard St., Chicago.
Levy, Robert C., Capt., 5555 Everett Ave., Chicago.
Lichtenstein, Manuel E., Lt. Col., 1409 N. Kedzie Ave., Chicago.
Loeffler, Robert W., Major, 4137 S. Wrennah Ave., Berwyn.
McNutt, Justin C., Capt., 620 Maple St., Bloomington.
Martin, Albert G., Major, 545 Hardin St., Aurora.
Martin, Forrest R., Major, 259 N. Water St., Decatur.

PHYSICIANS SEPARATED FROM SERVICE

Illinois—Continued

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Mindlin, Joseph, Capt., 1041 Irving Park Rd., Chicago.
Nelson, Melvin J., Capt., 4331 W. Schubert Ave., Chicago.
Osborne, George M., Capt., 5140 Glenwood St., Chicago.
Penning, Howard L., Capt., 925 S. Cleveland, Springfield.
Perlmutter, Harold M., Capt., 916 E. 55th St., Chicago.
Peters, Walter J., Capt., 833 N. Rockwell St., Chicago.
Picard, Arthur P., Major, 7200 Paxton Ave., Chicago.
Pohl, Carl M. Jr., Capt., 5737 W. Race Ave., Chicago.
Powell, Harry I., Capt., 4942 N. Kimball Ave., Chicago.
Puckett, Francis L., Capt., Box 286, Stonington.
Rasche, Herbert P., Capt., 202 S. 12th Ave., Maywood.
Reagan, Sheldon W., Capt., Aroma Park.
Redmond, Ralph N., Capt., % Central Trust Bldg., Sterling.
Robinson, Leon E., Lt. Col., 502 S. Maple St., Alledo.
Rosenberg, Jack, Capt., 237 Le Grange Blvd., Aurora.
Rosenthal, Irving H., Major, 3425 Douglas Blvd., Chicago.
Ross, Donald, Capt., Univ. of Chicago Clinics, Chicago.
Rossiter, Donald E., Capt., 1871 Lyman Ct., Highland Park.
Rudnick, Dorrin F., Lt. Col., 457 W. Oakdale Ave., Chicago.
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Schaffer, Bernard J., Capt., 3925 W. Gladys Ave., Chicago.
Schiff, Joseph H., Major, 3875 W. Polk St., Chicago.
Schnicke, Elmer H., Capt., Waynet.
Scott, Walter E., Capt., Lexington.
Scudieri, Carmen, Capt., Box 206, Gardner.
Sheehan, Edward C., Capt., 157 N. Leamington Ave., Chicago.
Siegal, Henry A., Capt., 507 S. Central Ave., Chicago.
Siegel, Morris, Capt., Mt. Sinai Hosp., Chicago.
Silverstein, Joseph, Major, Cook County Hosp., Chicago.
Simmons, Warren K., Major, St. Luke's Hosp., Chicago.
Slotta, Alfred M., Capt., 5945 W. Belmont Ave., Chicago.
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Stoops, Richard B., Capt., 7524 Stewart Ave., Chicago.
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Towle, Gilbert A., Major, 355 Ridge Ave., Evanston.
Vacante, Anthony B., Capt., 2636 N. Richmond St., Chicago.
Wagner, David, Major, 6 N. Michigan Ave., Chicago.
Wagner, Jack, Capt., 1820 S. Central Park Ave., Chicago.
Walsh, Eugene L., Major, 815 Ridge Ave., Evanston.
Weidner, Morris R. Jr., Capt., 14105 Lincoln Ave., Dolton.
Weiner, Harry I., Major, 2513 N. Clark St., Chicago.
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Wolf, Alexander, Capt., 1616 W. Northshore Ave., Chicago.
Wolin, Irvin, Major, 104 S. Michigan Ave., Chicago.
Wolters, Simon L., Capt., 5841 Maryland Ave., Chicago.
Zarcone, Vincent P., Capt., 645 S. Dennis, Decatur.
Zimmerman, Lazar E., Major, 33 N. Ayer St., Harvard.

Indiana

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Barton, Willoughby M., Capt., Centerville.
Burnikel, Ray H., Capt., 146 W. 18th, Indianapolis.
Cushman, Joseph B., Capt., P. O. Box 123, Gary.
Dierolf, Edward J., Capt., 6049 Miller Ave., Gary.
Dorman, Jack, Capt., 4059 Central Ave., Indianapolis.
Fisher, Henry, Capt., 1704 E. 34th St., Marion.
George, Charles L., Capt., RR 16, Box 311 H., Indianapolis.
Green, Frederick C., 1st Lt., 1002 Hugh St., Fort Wayne.
Hall, Emory H., Major, 421 S. Main St., Dunkirk.
Meade, Walter W., Major, Bicknell Hosp., Bicknell.
Moss, Mavor J., Capt., Yorktown.
Rininger, Harold C., Capt., R. R. 3, Rockport.
Shortz, Gerald, Capt., 102½ N. Main St., Kendallville.
Spindler, Robert D., Capt., 1431 A. Ave., New Castle.
Steele, Brandt F., Major, 477 N. Audubon Rd., Indianapolis.

Iowa

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Berney, Paul W., Major, 834 20th St. S.E., Cedar Rapids.
Edington, Frank D., Col., 445 W. 2d St., Spencer.
Grinley, Andrew V., Capt., Rockwell City.
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Ware, Stephen C., Major, Kalona.
White, Thomas B., Capt., Plain Dealing.

Kansas

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Kaufman, LeRoy V., Capt., 404 S. Rutan, Wichita.
Robinson, David W., Capt., Univ. of Kansas Hosp., Kansas City.
Rumold, Mervin J., Lt. Col., 1919 Olathe Blvd., Kansas City.
Schulte, Edward J., Capt., 505 N. Summitt, Girard.
Shrader, Doyle A., Capt., Sawyer.
Stensaas, Carl O., Major, 321 N. 2d St., Lindsborg.
Voldeng, Karl E., Lt. Col., 321 E. 10th, Wellington, Sumner Co.
Walters, Byron W., Capt., Lawrence.
Wenke, Leo L., Capt., 2324 Broadway, Great Bend.

Maine

Coffin, Silas A., Major, 39 High St., Bar Harbor.
Famularo, Nicholas A., Capt., Jackman Station, Jackman.
Larson, Karl V., Major, 41 Court St., Machias.
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Skillin, Charles E., 1st Lt., 14 Adelbert St., South Portland.

Maryland

Babb, Dudley C., Major, Ruxton.
Eastman, Wilfred W. Jr., Major, 210 Tulip Ave., Takoma Park.
Goodman, Howard, Lt. Col., 511 Wilton Rd., Towson.
Hope, Daniel Jr., Capt., Ellicott City.
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Mississippi

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Montana

Brooke, Joseph M., Capt., Ronan.
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Nebraska

Brillhart, Everett G., Major, Shelby.
Holmes, William E., Capt., 3747 Holdrege, Lincoln.
Matson, Roy M., Major, Holdrege.
Reeder, Robert C., Capt., Holdrege Hosp., Holdrege.
Staubitz, Herbert F. F., Capt., 4702 Walnut St., Omaha.
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Nevada

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Stahr, Roland W., Capt., P. O. Box 966, 348 Hillcrest Dr., Reno.

New York

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Azzara, Charles T., Capt., 176 Tulip Ave., Floral Park.
Brill, Bernard, Capt., 467 9th St., Brooklyn.
Chassin, Maurice R., 1st Lt., 76-36 113th St., Forest Hills.
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Feller, Morris, Capt., 3080 Nostrand Ave., Brooklyn.
Goodman, Edward, Capt., 124 E. 176th St., Bronx.
Harrison, Leslie S., Capt., 37-05 Parsons Blvd., Flushing.
Jenczewski, Casimir G., Capt., 275 Lake Ave., Lancaster.
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PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

McGuire, Gerald S., Capt., 19 Lapham Park, Webster.
 McLoughlin, George W., Major, 52 Spring St., Rochester.
 McMahon, Jeremiah J., Lt. Col., 47 89th St., Brooklyn.
 MacVay, William A., Lt. Col., 167 Oakdale Dr., Rochester.
 Madden, William L., Capt., 21 Westland Ave., Rochester.
 Manfredi, Joseph J., Capt., 3109 Park Ave., New York.
 Manuele, Charles A., Capt., 34 Parson Ave., Rochester.
 Margolis, Hyman, Capt., 5614 15th Ave., Brooklyn.
 Maxwell, C. H. Jr., Lt. Col., N. Y. State Educ. Dpt., Albany.
 Mayers, Albert N., Major, Psychiatric Inst., New York.
 Mebel, Frederick R., Capt., 84 Prospect Park S.W., Brooklyn.
 Menden, Julian, Major, 2266 Andrews Ave., New York.
 Mehlman, Joseph S., Capt., 111 E. 21st St., Brooklyn.
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 Merker, Aaron, Capt., 2350 Webster Ave., New York.
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 Moloshok, Ralph E., Capt., 2720 Grand Concourse, Bronx.
 Monteleone, Joseph C., Capt., 145 Montrose Ave., Brooklyn.
 Moore, William H., Major, 121 Van Dam St., Saratoga Springs.
 Morey, Jerome, Capt., 35 Pond Park Rd., Great Neck.
 Mostofsky, David, Capt., 985 E. 179th St., Bronx.
 Muckenfuss, R. S., Col., Resh. Lab., Foot of E. 15th St., N. Y.
 Mulcahy, Thomas M., Major, 142 W. 64th St., New York.
 Nemiroff, Nathan, Capt., 261 Seaman Ave., New York.
 Nisnewitz, Samuel, Major, 665 St. Marks Ave., Brooklyn.
 O'Brien, William H., Lt. Col., 66 Judson St., Albany.
 O'Connor, Paul J., Capt., 57 W. 57th St., New York.
 Orkin, Louis R., Capt., 360 W. 21st St., New York.
 Paganelli, Americus J., Major, 144 W. 11th St., New York.
 Pagnillo, Lino A., 1st Lt., 17 Ridge St., Tuckahoe.
 Patterson, Robert L. Jr., Lt. Col., 148 E. 65th St., New York.
 Pellicano, Victor L., Major, 426 7th St., Niagara Falls.
 Pennell, Samuel, Capt., 1187 Ocean Ave., Brooklyn.
 Perrino, Benjamin A., Capt., 76 Washington St., Poughkeepsie.
 Peskin, Henry, Major, 41 W. 96th St., New York.
 Pestillo, Mario P., 1st Lt., 242 Baker Ave., Syracuse.
 Pfaff, Francis O., Capt., 258 Main St., Oneida.
 Phillips, Colgate B., Capt., 135 Park Ave., Bronxville.
 Pittinos, G. E. Jr., Capt., 34 Walbrook, Randall Manor, S. I.
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 Sole, Eugene, Major, 641 Crown St., Brooklyn.
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New York—Continued

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 Steine, Lyon, Capt., 90 Roosevelt Ave., Valley Stream.
 Stone, Robert D., Capt., 436 Greene Ave., Brooklyn.
 Storrs, Bruce D., Capt., 61 W. 55th St., New York.
 Swanker, Wilson A., Capt., R. D. 2, Ballston Spa.
 Swanson, Paul R., 1st Lt., Orchard Park.
 Tabbat, Samuel F., Capt., 1810 Longfellow Ave., New York.
 Taddeo, Mario C., Major, 2311 Beaumont Ave., Bronx.
 Tempel, George E., Capt., 130-43 266th St., Laurelton, L. I.
 Thompson, Joseph J., Capt., 75 1st Ave., Gloversville.
 True, Ansel B., 1st Lt., Hillsdale.
 Tuchman, Lester R., Lt. Col., 829 Park Ave., New York.
 Turano, Leonard F., Capt., 221 Linden St., Brooklyn.
 Turner, Joseph C., Lt. Col., 418 W. 118th St., New York.
 Tutrone, David A., Major, 64 Harding Pl., Freeport, L. I.
 Unger, Max, Capt., State Hosp., Middletown.
 Unger, Paul N., Major, 420 Avenue F, Brooklyn.
 Valenti, Frank D., Major, 549 Isham St., New York.
 Velardi, Martin J., Capt., 711 Union St., Brooklyn.
 Vella, Paul D., Major, 456 W. 35th St., New York.
 Vesey, Frank A., 1st Lt., 311 E. 72d St., New York.
 Wallfield, Mark J., Capt., 1269 46th St., Brooklyn.
 Weintrob, David I., Major, 8602 Ridge Blvd., Brooklyn.
 Weiss, Fred M., Capt., 20-25 37th St., Astoria, L. I.
 Wellmann, Jacques, Capt., 150-31 34th Ave., Flushing.
 Werner, Howard L., Capt., 575 Park Ave., New York.
 Wetchler, Benjamin B., Capt., 303 E. 17th St., New York.
 Wieder, Harry S., Capt., 962 Aldus St., Bronx.
 Wolf, Max W., Major, 1869 Walton Ave., Bronx.
 Wolff, Herman, Major, % H. Kolb, 4761 Broadway, New York.
 Wolff, James A., Capt., 225 W. 86th St., New York.
 Wright, Myron, Capt., 24 Bretton Rd., Scarsdale.

North Carolina

Alexander, Leo, Major, Duke Hosp., Durham.
 Bostic, William C. Jr., Capt., Forest City.
 Caldwell, Jesse B. Jr., Capt., 203 Front St., Cramerton.
 Cherry, James H., Major, 39 Edgewood Rd., Asheville.
 Covington, Furman P., Capt., Mills Home, Thomasville.
 Craven, Frederick T., Capt., 7 N. Union St., Concord.
 Cree, Maurice B., Major, Cabarus Theatre Bldg., Concord.
 Fleming, Lawrence E., Major, 609 S. Summit Ave., Charlotte.
 Fox, Dennis B., Capt., 1515 Oriole Pl., Greensboro.
 Gardner, Clarence E. Jr., Lt. Col., Duke Hosp., Durham.
 Glenn, Eugene B., Capt., 17 Sylvan Ave., Asheville.
 Goldstein, J. J., Capt., James Walker Mem. Hosp., Wilmington.
 Hall, Edgar M. Jr., 1st Lt., 1017 Vance St., Raleigh.
 Harris, Isaac E. Jr., Lt. Col., 123 W. Main St., Durham.
 Hawes, James B., Capt., 523 Evans St., Greenville.
 Holladay, Beverly L., Capt., 522 S. Mulberry St., Statesville.
 Hunter, John F. C., Capt., Magnolia.
 Hutchinson, Robert H., Capt., Duke Hosp., Durham.
 Killian, Frank M., Capt., Franklin.
 Lancaster, Forrest J., Capt., 109 W. Center St., Lexington.
 Lewis, Walter G., Capt., Box 17, Stokesdale.
 McDonald, Lester B., Major, Hendersonville.
 McKee, Lewis M., Capt., 1020 Sycamore St., Durham.
 Moorefield, Robert H., Capt., 403 S. Ridge Ave., Kannapolis.
 Odom, Robert T., Capt., Missen Bldg., Winston-Salem.
 Perryman, Olin C., 1st Lt., 1019 West St., Winston Salem.
 Persons, Elbert L., Lt. Col., Duke Hosp., Durham.
 Pope, Samuel A., Capt., Beulaville.
 Renegar, James G., Capt., Bennett St., Southern Pines.
 Rhodes, James S. Jr., Capt., 100 Simmons Ave., Williamston.
 Richie, Richard F., Major, 1816½ Arlington St., Raleigh.
 Sawyer, Logan E., Major, South Mills.
 Sirlin, Edward M., Lt. Col., 1300 Broad St., Durham.
 Sotirion, George A., Capt., Charlotte Mem. Hosp., Charlotte.
 Stenhouse, Gordon C., Capt., Duke Hosp., Durham.
 Thomas, Walter L., Major, Duke University Hosp., Durham.
 Troutman, Baxter S., Capt., 206 Olive Ave., Lenoir.
 Warshawer, Samuel E., Major, 1009 Market St., Wilmington.
 Windley, William H., Major, Washington.
 Wood, George T. Jr., Col., 1104 Forest Hill Dr., High Point.

North Dakota

Anderson, Harry O., 1st Lt., Velva.
 Baggenstoss, Osmond J., Capt., 235 1st Ave., West Dickinson.
 Christiansen, Harold A., Major, Box 476, Jamestown.
 Driver, Donn R., Capt., 307 Washington St., Bismarck.
 Johnson, Christian G., Lt. Col., Rugby.
 Johnson, Maxwell H. D., Capt., Watford City.
 Swingle, Alvin J., Major, 222 W. Main St., Mandan.

PHYSICIANS SEPARATED FROM SERVICE

Ohio

Albert, Irwin C., Major, 1546 Beaverton Ave., Cincinnati.
 Albl, Frank O., Capt., 4966 Edgepark Dr., Garfield Heights.
 Althoff, William R., Major, 2035 Salem Ave., Dayton.
 Askue, Chester M., Capt., 53 W. Florida Ave., Youngstown.
 Axelson, Oscar A., Capt., 4044 Hudson Dr., Youngstown.
 Barker, Harold J., Major, 2734 Hampshire Rd., Cleveland Hgts.
 Bartunek, Robert R., Major, 18720 Scottsdale Blvd., Cleveland.
 Berger, I. L., Major, 3424 Beechwood Ave., Cleveland Hgts.
 Blinn, J. C. Jr., Lt. Col., 206 E. High Ave., New Philadelphia.
 Boyer, B. E., Lt. Col., 3565 Shaw Ave., Hyde Pk., Cincinnati.
 Bremen, Harry, Major, 721 Lexington Ave., Dayton.
 Brewer, Russell M., Capt., 444 E. Mulberry St., Lebanon.
 Browne, Kenneth B., Capt., Whitehouse.
 Buchanan, Richard R., Capt., 3114 Portsmouth Ave., Cincinnati.
 Buck, John F., Capt., 2837 118th St., Toledo.
 Burgess, Everett C., Capt., 524 N. Buckeye St., Wooster.
 Burstein, Henry A., Lt. Col., 334 W. Bancroft St., Toledo.
 Chambers, David A., Col., 3651 Rawnsdale Rd., Cleveland.
 Colla, Joseph, Capt., 321 Midlothian Blvd., Youngstown.
 Crawford, Myron E., Capt., 6718 Franklin Blvd., Cleveland.
 Crumley, Harold M., Major, Chillicothe.
 Cunningham, Ralph B., Capt., 737 Elliott Ave., Arlington Hgts.
 Ditch, Edward G., Capt., 1102 North St., Caldwell.
 Dougherty, Clark M., Lt. Col., Saltwell Rd., New Philadelphia.
 Easton, James W., Lt. Col., Akron.
 Emery, George M., Capt., Countryside, Ashland.
 Evans, George L., Major, 477 Devey St., Mansfield.
 Felson, Walter, 1st Lt., 357 South St., Greenfield.
 Fox, Dale E., Major, % Mrs. John Noll, Covington.
 Freilich, Myron A., Major, 534 Ball St., Zanesville.
 Gates, Stephen E., Capt., 1032 Lake Rd., Conneaut.
 Graf, Douglas P., Capt., 2934 Vernon Pl., Cincinnati.
 Greenberger, Maurice L., Capt., Courtland Hotel, Canton.
 Guilford, Frederick R., Major, 139 Wilbur Ave., Columbus.
 Gustafson, Milton H., Capt., 10126 Fidelity Ave., Cleveland.
 Hall, Raymond A., Capt., 3521 Hopkins Rd., Youngstown.
 Hallaran, W. R., Lt. Col., 9718 Lake Shore Blvd., Cleveland.
 Hamilton, John M., Capt., 1344 Hann Bldg., Cleveland.
 Hamman, Reuben H., Capt., Waterville.
 Hardman, Edward F., Major, 1050 Wilson Ave., Youngstown.
 Haynes, Ormond L., Capt., RFD 1, Marietta.
 Henderson, John F., Capt., 1269 Kenmore Blvd., Akron.
 Hepp, William, Capt., 3011 Beaver Ave., Cincinnati.
 Hershberger, Ralph E., Capt., 14 Miami St., Tiffin.
 Humel, Elbert J., Capt., 3584 W. 50th St., Cleveland.
 Ingling, Howard H., Capt., 803 S. Limestone St., Springfield.
 Joelson, James J., Major, 2374 Roxboro Rd., Cleveland Heights.
 Johnson, Herbert H. Jr., Capt., University Hosp., Cleveland.
 Jordan, Valdemar M., Capt., University Hosp., Cleveland.
 Kackley, Desmond D., Major, University Hosp., Columbus.
 Kalb, Nathan, Capt., Cygnet.
 Katz, Sidney, Capt., 10808 Massie Ave., Cleveland.
 Kaylor, Frederick W., Capt., Bellefontaine.
 Kechele, Oliver J., Major, 93 E. Bridge St., Bera.
 Kotte, Robert H., Lt. Col., 259 Greendale Ave., Cincinnati.
 Kubiak, Willis T., Capt., 122 E. Main St., Lancaster.
 Kulle, Henry F., Major, 1152 Overlook Ave., Cincinnati.
 Layman, Orville L., Capt., 18 W. 4th St., Franklin.
 Levin, Jack J., Capt., Vet. Administration Facility, Dayton.
 Lichtblau, Abe A., Capt., 1710 Vassar N.W., Canton.
 Liebow, Irving M., Major, 246 E. 105th St., Cleveland.
 Lowry, Kenneth F., Lt. Col., 119 S. Mulberry St., Troy.
 McAuley, James R., Capt., 432 E. 2d, Perryburg.
 McGaw, Wilbert H., Lt. Col., 15518 Oakhill Rd., E. Cleveland.
 Mallin, Lloyd P., Capt., 891 Clinton Springs, Cincinnati.
 Marsico, Henry C., Capt., 1948 Broadway, Lorain.
 Maryanski, William H., Major, 390 Dorchester Rd., Akron.
 Mattocks, Theodore R., Capt., 231 3d St., Marietta.
 Merchant, Frederick T., Major, 1076 E. Center St., Marion.
 Miller, Michael M., Major, 2516 Sunset Blvd., Steubenville.
 Mirsky, I. Arthur, Major, 4 Lenox Lane, Cincinnati.
 Nauman, John H., Col., 31 N. 4th St., Martins Ferry.
 Northrup, Clarence E. II, Major, McConnellsville.
 O'Dea, Frank J., Capt., 16201 Invermere, Cleveland.
 Osmond, J. D. Jr., Capt., 3035 Euclid Hgts., Cleveland Hgts.
 Patterson, R. J., 1st Lt., 240 E. McCreight Ave., Springfield.
 Peabody, George A., Major, 2652 Exeter Rd., Cleveland Hgts.
 Peerless, Julius, 1st Lt., 1860 Queen City Ave., Cincinnati.
 Phillips, Clovis H., Major, 2310 Ardleigh Dr., Cleveland Hgts.
 Platt, Arnold D., Capt., 44 E. Church St., Columbus.
 Pinkerton, Alfred W., Major, 1519 W. High St., Lima.
 Pollack, David, Major, 391 Berkeley Rd., Columbus.
 Raitano, Augustine J., Capt., 2665 E. 51st St., Cleveland.

Ohio—Continued

Romoser, William K., Capt., 1468 Wilson Ave., Columbus.
 Scheetz, Maurice E., Capt., Kalida.
 Seagrave, Gordon S., Lt. Col., Granville.
 Shaw, Dudley J., Lt. Col., 165 Rosenberry St., Alliance.
 Silver, Francis F., Capt., Children's Hosp., Akron.
 Slusher, Robert G., Capt., St. Henry.
 Snedden, Harold E., Capt., 3547 Rosedale Pl., Cincinnati.
 Spring, William C., Major, Route 1, Concord.
 Stuhlman, Byron C., Capt., 1829 E. 3d St., Dayton.
 Swango, William R., Capt., 323 Park Ave., Ironton.
 Tanno, Anthony M., Capt., 16210 St. Clair Ave., Cleveland.
 Thompson, James E., Major, 930 Briar Ave., Wash. Ct. House.
 Tims, Walter J., Major, 415 Colhasset Dr., Youngstown.
 Williams, George J., Capt., 11311 Shaker Blvd., Cleveland.
 Wood, Cyrus R., Lt. Col., 429 Monroe St., Port Clinton.
 Wynsen, Henry J., Capt., 346 E. Ravenwood, Youngstown.
 York, Dillard B. Jr., Major, University Hosp., Columbus.

Oklahoma

Buford, Elvin L., Capt., 1406 W. Main, Collinsville.
 Carlock, John H. Jr., Major, 303 Gilbert Bldg., Ardmore.
 Cook, Edward T. Jr., Major, 212 W. Central Blvd., Anadarko.
 Hood, James O., Major, Norman.
 Kahn, Robert W., Capt., 605 Euclid Ave., Lawton.
 Kaiser, George L., Major, Muskogee.
 Kendall, Robert L., Capt., Strong City.
 Lawson, Patrick H., Lt. Col., Marietta.
 McCollum, Wiley T., Capt., Gen. Del., Waynoka.
 Miller, John E., Capt., 1616 W. 33d St., Oklahoma City.
 Miller, Nesbett L., Lt. Col., Oklahoma City.
 Perry, Fred T., Capt., Haldton.
 Phelan, Ralph S., Capt., East D Ave., Waurika.
 Prather, Frank W., Capt., Vet. Hosp., Sulphur.
 Rubin, Herschel J., Major, Albany Hotel, Tulsa.
 Schwartz Herbert N., Capt., 1340 S. Florence St., Tulsa.
 Stowers, Aubrey E., Capt., Sentinel.
 Taylor, Lewis C., Capt., 5917 N. W. 56th St., Oklahoma.

Oregon

Blair, Harry C., Lt. Col., 1258 NW Summitt Ave., Portland.
 Chapman, William H., Lt. Col., Tiffany Bldg., Eugene.
 Diack, Archibald W. Jr., Capt., 6617 S. E. 30th St., Portland.
 Mason, Herbert E., Capt., Box 66, Beaverton.
 Miller, Joseph L. Jr., Capt., 3424 S. E. Tolma St., Portland.
 Miller, Vern W., Major, 1825 Fairmont St., Salem.
 Woolcott, Floyd L. Jr., Capt., 408 N. Holland, Portland.

Pennsylvania

Anders, Wilbur D., Capt., Main & Highland Ave., N. Wales.
 Ashman, Philip, Capt., Vintondale.
 Bank, R. Stanley, 1st Lt., 2603 N. 2d St., Harrisburg.
 Biederman, Albert M., Capt., 27 W. S. St., Wilkes-Barre.
 Birkel, Benedict H., Capt., Bethlehem.
 Blake, Paul O., Major, Lansdowne Ave., Lansdowne.
 Blazina, William M., Capt., 1029 Vick St., McKeesport.
 Block, Louis H., Capt., 926 Lindley Ave., Philadelphia.
 Bloom, D. George, Major, 1077 McKinley Ave., Johnstown.
 Boucek, John J., Capt., 3208 Perrysville Ave. N.S., Pittsburgh.
 Brant, Carl E., Major, 451 Harrison Ave., Greensburg.
 Bregman, Joseph, Capt., 1629 N. Franklin St., Philadelphia.
 Brill, Francis W., Capt., 1318 Jackson, Scranton.
 Broselow, D. D., Capt., 2833 W. Allegheny Ave., Philadelphia.
 Buchert, J. G., 1st Lt., 2037 E. Allegheny Ave., Philadelphia.
 Cambest, M. A. Jr., Major, 1670 New Haven Ave., Pittsburgh.
 Caplan, Aaron, Major, 710 Park Ave., Ellwood City.
 Chervinko, Joseph, Major, 309 Florida St., Farrell.
 Claffey, John B., Capt., 606 N. 64th St., Philadelphia.
 Cleaver, Edgar E., Major, Palm.
 Clements, Harry H., Capt., 412 3d Ave., Altoona.
 Cole, Jack E., Capt., Ave B and 1st St., Matamoras.
 Croom, Arthur B., Capt., 4721 Walnut St., Philadelphia.
 D'Alfonso, Anthony D., Major, 1208 Moore St., Philadelphia.
 Davis, George B., Capt., 265 N. Maple Ave., Kingston.
 de Prophetis, Nino, Major, 370 Parker St., Chester.
 Dessen, Edgar L., Major, Jefferson Hosp., Philadelphia.
 Dickinson, Daniel W., Capt., 5634 Stanton Ave., Pittsburgh.
 Doering, John A., Major, 3616 California Ave., Pittsburgh.
 Dohan, Francis C., Major, 80 Princeton Rd., Cynwyd.
 D'Onofrio, Romeo R., Capt., 323 S. Broad St., Kennett Square.
 Downey, Regis F., Major, Greensboro.
 Dreier, Joseph F., Major, P. O. Box 30, Dushore.
 Edmundson, Walter F., Capt., 5317 5th Ave., Pittsburgh.
 Edwards, William C., Capt., 138 Wynoka St., Pittsburgh.

PHYSICIANS SEPARATED FROM SERVICE

Pennsylvania—Continued

Egbert, Ernest W., Major, 601 E. 13th St., Chester.
 Engle, Rowland B., Major, 3220 Unruh Ave., Philadelphia.
 Ervin, Kenneth D., Major, 114 York Rd., Jenkintown.
 Everett, Harold E., Capt., 740 2d St., Catasauqua.
 Falcone, Benjamin L., Capt., 113 E. 4th St., Bridgeport.
 Farber, Harold L., Capt., 521 N. 25th St., Reading.
 Faust, Frederic B., Capt., 634 S. 52d St., Philadelphia.
 Feick, Ralph H., Capt., 807 N. 10th St., Reading.
 Fish, Henry, Major, 603 Prescott Ave., Scranton.
 Fisher, Edward J., Capt., 807 Spruce St., Philadelphia.
 Fister, Thomas R., Major, Frederickburg.
 Flowers, Claude J. B., Capt., 2541 Walnut St., Penbrook.
 Flugel, Gerald N., Col., 73 W. Ross St., Wilkes-Barre.
 Frantz, Robert R., Capt., 2139 S. 11th St., Philadelphia.
 Fritchey, Thomas J., Capt., 1438 Market St., Harrisburg.
 Froggatt, John W., Capt., 1744 Orthodox St., Philadelphia.
 Garber, Jacob H. Jr., Capt., 320 S. Market St., Elizabethtown.
 Gartman, Edward, Capt., 1409 Surreer La., Philadelphia.
 German, John E., Capt., 1544 Perkiomen Ave., Reading.
 Glick, Herbert D., Major, 1401 Centennial Ave., McKeesport.
 Goldman, Louis H., Capt., Pennhurst State School, Pennhurst.
 Goldman, Sidney S., Major, 517 S. 8th St., Philadelphia.
 Goldsmith, Charles P., Capt., 718 Race St., Catasauqua.
 Graybill, John G., Capt., Gen. Del., Dunbar.
 Hanlon, Paul A., Capt., 160 N. Wyoming St., Hazelton.
 Hankin, Samuel, Capt., Easton Rd., Warrington.
 Hanna, Charles M., Major, 408 W. Mt. Airy Ave., Philadelphia.
 Harasym, Emil L., Capt., 952 N. Franklin St., Philadelphia.
 Hartnett, Eugene M., Capt., 722 Foss Ave., Drexel Hill.
 Hawkins, Wilbur J. Jr., Capt., Fredericktown.
 Hecker, Arthur O., Lt. Col., State Hosp., Harrisburg.
 Hellesteen, Herman K., Capt., 35th & Curie St., Philadelphia.
 Hildreth, Richard L., Major, 21 Jefferson St., Bradford.
 Heyl, Walter M., Major, 438 E. Durham St., Philadelphia.
 Hicks, Harvard R., Major, 91 E. Ashland St., Doylestown.
 Hildreth, Allen W., Capt., 207 Manantonho St., Pottsville.
 Hogg, Harold K., Lt. Col., 802 N. Duke St., Lancaster.
 Hoover, Carl H., Lt. Col., Lancaster.
 Horvat, Arthur J., Major, 802 Main St., Duryea.
 Hudson, Joseph C., Capt., Kenwood Rd., Chambersburg.
 Hughes, Harold F., Capt., Hahemann Hosp., Philadelphia.
 Hunter, John S., Major, 425 Sunset Rd., West Reading.
 Hurok, Oscar J., Capt., Main St., Galetton.
 Jamison, Edgar L., Major, 22 Rosedale Ave., Greenville.
 Jenkins, Benjamin W., Capt., 1526 E. Upsal Pl., Philadelphia.
 Johns, Sydney L., Major, 727 Hill Ave., Wilkesburg.
 Kaplan, Louis, Capt., 2211 South St., Philadelphia.
 Kates, James H., Major, 1533 S. 6th St., Philadelphia.
 Kaczynski, Stanley B., Major, 263 Main St., Pittsburgh.
 Keyes, Baldwin L., Lt. Col., 2025 Walnut St., Philadelphia.
 King, Elmer S. A., Major, Centre & Aiken Aves., Pittsburgh.
 Lechner, Carl B., Major, 533 W. 31st St., Erie.
 Leitner, Moses J., Capt., P. O. Box 72, Bushkill.
 Lipman, Bernard L., Major, 4621 N. 10th St., Philadelphia.
 Logrippo, Gerald A., Major, 352 E. Main St., Norristown.
 Lorusso, Virgil A., 1st Lt., 419 W. 17th St., Erie.
 McCafferty, John S., Major, 405 Market St., Freeport.
 McCall, Charles S. Jr., Lt. Col., Doctor's Home, Philadelphia.
 McConahy, W. M. Jr., Capt., Philadelphia G. H., Philadelphia.
 McDonald, Phillip R., Lt. Col., 255 S. 17th St., Philadelphia.
 Mallinger, Samuel H., Capt., 372 Franklin Ave., Aliquippa.
 Marlin, Vinson L., Capt., 200 E. 10th St., Marcus Hook.
 Massey, Gordon J., Capt., 1064 Silliman, Lawrence Pk., Erie.
 Maurer, John F., Major, 128 Oakland Ave., Greensburg.
 Maye, Thomas J., Capt., Allentown.
 Mihelic, Fabian M., Capt., Bellevue.
 Miller, Charles J., Major, 2807 W. Allegheny Ave., Philadelphia.
 Mitchell, John M., Col., Cushman Rd., Rosemont.
 Morgan, Arthur E., Lt. Col., 307 Wilson Ave., Washington.
 Moyer, Dwight L., Capt., 50 Lincoln Ave., Hatfield.
 Muckle, Craig W., Major, Coopertown Rd., Haverford.
 Munchak, A. M., Capt., 643 N. Washington Ave., Scranton.
 Murdock, Fred E., Capt., 265 N. St. Marys St., St. Marys.
 Murphy, James H., Capt., High St., Curwensville.
 Murray, William M., Capt., 309 Main St., Smethport.
 Nicastro, Gennaro C., Capt., 2022 W. Indiana Ave., Philadelphia.
 Nowacki, Stanley M., 1st Lt., 884 High St., Pottstown.
 O'Boyle, James P., Capt., 2027 Greenridge St., Dunmore.
 Ocelus, Edward V., Capt., 474 Ford St., Bridgeport.
 Oliver, Orlando P., Capt., Acosta.
 O'Meara, Thomas J., 1st Lt., 7543 Hutchinson Ave., Swissvale.

Pennsylvania—Continued

Parsons, Frederick A., Capt., 600 Overbrook Blvd., Pittsburgh.
 Pugh, George E., 1st Lt., 203 Wheeler Ave., Scranton.
 Purpura, Thomas R., Capt., 811 Osage Dr., Mt. Lebanon.
 Raines, Herbert S., Major, 6897 N. 19th St., Philadelphia.
 Reichwein, Carl F., Capt., 1239 Center St., Ashland.
 Rossman, Bernard, Capt., 5603 Woodcrest Ave., Philadelphia.
 Rovito, Saverio, Capt., St. Agnes Hosp., Philadelphia.
 Russo, Joseph, Capt., 533 Hamilton St., Norristown.
 Saylor, Blair W., Capt., 617 Main St., Rockwood.
 Shippy, Marvin G., Capt., 3 N. Swathmore St., Ridley Park.
 Shugert, George F., Capt., 3637 N. Sydelham, Philadelphia.
 Sindaco, Mario S., Capt., 410 N. Main St., Plains.
 Solomon, Elias M., Capt., 516 N. Duke St., Lancaster.
 Sunday, Harold B., Capt., 100 Luzerne Ave. W., Pittson.
 Thomas, John L., Capt., 19 Louisa Ave., Greenville.
 Varano, Nicholas R., Major, 15th & Spruce St., Philadelphia.
 Williams, James T., Capt., 1238 S. Main St., Wilkes-Barre.
 Wu, William Q., Major, 1700 E. Moyamensing, Philadelphia.
 Zewe, James A., Capt., 4870 Giddings St., Pittsburgh.

Rhode Island

Catullo, Emilio A., Capt., 492 Branch Ave., Providence.
 Clark, John Q., 1st Lt., 763 Smith St., Providence.
 Di Pippo, Palmiro, Major, 277 Broadway, Providence.
 Jadosz, Frank C. J., Capt., 67 Berlin St., Providence.
 Mellone, John A., Major, 227 Federal St., Providence.
 Platt, Marden G., Capt., 123 Massasoit Ave., Barrington.
 Sherman, Robert S., Major, 281 Prospect St., Pawtucket.

South Carolina

Allen, Benjamin L., Capt., 416 E. Main St., Spartanburg.
 Barber, Edward R., Capt., Box 6, Clio.
 Bradham, Allen C., Capt., 161 Westview Ave., Anderson.
 Bradley, William S. Jr., Capt., 110 W. Earle St., Greenville.
 Brockington, William S., Capt., Kingstree.
 Chapman, Charles G., Capt., 4221 Ridgewood St., Columbia.
 Cone, Wallis D., Capt., Williston.
 Jameson, John H., Major, N. B. St., Easley.
 Lippert, Karl M., Lt. Col., Lancaster.
 McNair, Wallace D. Jr., Capt., 1033 Pendleton St., Aiken.
 Neidich, Sol, Capt., Beaufort.
 Watson, Walter H., Capt., 124 Tradd St., Charleston.

South Dakota

Delaney, Robert J., 1st Lt., 520 E. 6th Ave., Mitchell.
 Hubner, Roland F., Capt., 802 W. 3d, Yankton.
 Pfister, Faris F., Capt., 909 Main, Webster.

Tennessee

Bacon, Harold L., Capt., Bryson City.
 Bass, Allan D., Capt., Vanderbilt Hosp., Nashville.
 Bogart, Franklin B., Lt. Col., 110 Sylvan Dr., Lookout Mt.
 Bowen, Lucius M., Major, Waverly.
 Cayce, Lee F., Capt., 1505 Gale St., Nashville.
 Chandlers, John H., Major, 706 S. Mansfield, Memphis.
 Crisler, Joseph A. Jr., Col., 212 E. Chickasaw Pkwy, Memphis.
 Donnell, Thomas A., Capt., Vanderbilt Univ. Hosp., Nashville.
 Gish, George E., Capt., Gilmore Apts, Memphis.
 Hughes, James G., Col., 204 Humes Pl., Memphis.
 Johnson, Harry Z., Major, 1882 Foster, Memphis.
 Love, Carruthers, Capt., Box 15, RFD 5, Memphis.
 Niceley, Eugene P., Major, 2416 E. Magnolia St., Knoxville.
 Otey, Bedford T., Capt., 2226 Vollintine, Memphis.
 Reisman, Edward E. Jr., Major, 75 S. Crest Rd., Chattanooga.
 Rogers, Frank T., Capt., 55 Nokomis Circle, Knoxville.
 Stone, William P., Capt., Springfield.
 Von Werssowetz, Odon F., Major, 3802 N. View, Chattanooga.
 Woodfin, Mose C., Capt., Fayetteville.

Texas

Agnew, William W., Major, Box 1152, Austin.
 Alexander, Eugene P., Capt., Box 264, Forney.
 Altick, Frank J., Capt., St. Paul's Hosp., Dallas.
 Armstrong, John W., Capt., 509 Stuart Ave., Houston.
 Baggett, Seldon O., Major, 2107 Newton St., Austin.
 Behrens, Charles A., Capt., 615 Byrne St., Houston.
 Bloom, Manuel G., Capt., 2414 Binz St., Houston.
 Bounds, Murphy, Major, Med. Arts Bldg., Dallas.
 Boyd, G. D. Jr., Lt. Col., 322 Med. Arts Bldg., San Antonio.
 Boysen, Arthur E., Major, 121½ S. Main St., McAllen.
 Braselton, Charles W. Jr., Capt., 1501 Grand Ave., Ft. Worth.
 Brotman, Jacob, Major, Corsicana.

PHYSICIANS SEPARATED FROM SERVICE

Texas—Continued

Burnett, Jack F., Major, 508 S. Knox St., Ennis.
Butte, Felix L., Major, 3700 Maplewood Ave., Dallas.
Fielding, Lewis J., Major, Vet. Adm., Waco.
Cecala, Philip J., Major, 2319 Shepherd Dr., Houston.
Cirone, Vincent C., Capt., 5745 Llano, Dallas.
Clark, Dan H., Major, Crowell.
Claunch, DeWitt, Major, Comanche.
Curb, Dolph L., Lt. Col., 1603 Med. Arts Bldg., Houston.
Daly, John F., Major, 1945 N. Simmons St., Abilene.
Davis, Leo G., Capt., 521 Med. Arts Bldg., Dallas.
Dyer, Edward L., Capt., Sweeny.
Ellis, Jack R., Capt., 313 Lawton, El Paso.
Faley, Frederick W., Major, P. O. Box 417, San Saba.
Foote, Stephen A. Jr., Major, 2610 Stanford, Houston.
Forbes, Marrell A. Jr., Major, 200 Warwick Blvd., San Antonio.
Grammer, James H., Lt. Col., 3628 Potomac St., Fort Worth.
Griffin, Otho P., Capt., 104 E. Elm St., Gainesville.
Hammond, Fred M., Capt., 505 S. Ballinger St., Fort Worth.
Hauser, Abe, Lt. Col., 3704 S. MacGregor Way, Houston.
Hellams, Alfred A., Major, 527 Newell, Dallas.
Higgins, William P. Jr., Major, 406 Med. Arts Bldg. Ft. Worth.
Humphry, Stanley G., Capt., P. O. Box 290, Baytown.
Jordan, Frank H. Jr., Capt., 3205½ Thomas Ave., Dallas.
Jorns, Cecil F., Lt. Col., 4426 Pease St., Houston.
Ketchem, Everard T., Capt., P. O. Box 247, Navasota.
Killingsworth, W. P., Lt. Col., 315 Adams Bldg., Port Arthur.
Locker, S. Braswell, Capt., 151 Coliad, San Antonio.
Lyon, Ervin F. Jr., Major, 2115 W. Gramercy, San Antonio.
McCarty, Ralph L., Capt., 519 Olive St., Texarkana.
McClure, Edwin E., Capt., Jacksboro.
McDougal, Luther L. Jr., Major, 233 Bonham, Paris.
Magness, William H., Major, 2041 W. Oak St., Denton.
Magrith, Philip, Capt., 112 W. Hollywood, San Antonio.
Mitchell, Joseph N., Capt., 4123 Bowser, Dallas.
Mixson, William C., Capt., Kirbyville.
Mooney, Ken, Major, 3405 Oak Lawn Ave., Apt. 219, Dallas.
Moore, Robert L., Capt., 4704 Shadywood Lane, Dallas.
Murphy, Joseph B., Major, 4101 Hanover, Dallas.
Pattillo, Guy L., Capt., 2231 S. 8th St., Abilene.
Payne, Frank C., Major, 1110 E. Hallum, Breckenridge.
Perman, Joshua M., Capt., Children's Medical Center, Dallas.
Pittman, James E., Major, 3220 Binz St., Houston.
Pruitt, Charles, Capt., Laneville.
Rounsaville, John Q., Capt., Wylie.
Ryan, Bert M., Lt. Col., 1403 Elliott St., Houston.
Scurry, Maurice M., Major, 1903 Bennett Ave., Dallas.
Seale, James N., Capt., Jasper.
Shaddix, James W., Lt. Col., 409 N. Houston St., Shamrock.
Stein, Ben, Capt., New Waverly.
Todar, Samuel P., Major, 1302 N. 7th St., Temple.
Veit, John P. A., Capt., Benavides.
Williams, Ethelbert C., Capt., 116 E. 8th St., Bonham.
Wilson, Thelbert R., 1st Lt., Liberty.
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Ximenes, Eduardo, Capt., FRD 2, Box 82, Floresville.

Utah

Conroy, Francis R., Lt. Col., Ogden.

Vermont

Asherman, Edward G., Capt., St. Albans.
Choate, Paul M., Capt., West Barnet.
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ORGANIZATION SECTION

THE NATIONAL HEALTH ACT OF 1945

An Analysis Prepared by the Bureau of Legal Medicine and Legislation, American Medical Association

Immediately following the submission to the Congress by President Truman of his special message on health, November 19, Senator Wagner, for himself and Senator Murray, introduced S. 1606, a bill proposing to enact a National Health Act of 1945. It was referred, at his request, to the Senate Committee on Education and Labor, of which Senator Murray is chairman. The earlier bill introduced by these two Senators, S. 1050, was referred to the Senate Committee on Finance. A companion bill in the House, H. R. 4730, was also introduced the same day by Representative Dingell and referred to the House Committee on Interstate and Foreign Commerce, of which Representative Lea, California, is chairman. The earlier House bill, H. R. 3293, was referred to the House Committee on Ways and Means.

The new bill is seventy-eight pages in length as compared with 185 pages in the earlier bill. Provisions contained in S. 1050 but omitted in the new bill include thirty-one pages proposing a hospital building program, about two pages providing for child welfare services and approximately eighty pages proposing extended unemployment and disability benefits, retirement, survivors and extended disability benefits, social insurance contributions and special credits for military service.

The new bill contains two titles. Title I comprises three parts, Part A proposing grants to states for public health services, Part B proposing grants for maternal and child health services and for services for crippled children, and Part C proposing grants for the medical care of needy persons. Title II carries the caption "Prepaid Personal Health Service Benefits" and is not materially dissimilar, except for provisions for financing the program, from the comparable sections contained in S. 1050. The earlier bill proposed a tax, euphoniously referred to as a "contribution," on employees, employers and the self-employed to finance the compulsory sickness insurance program proposed by it. The new bill imposes no taxes. The program it contemplates, as will appear in more detail later, will be financed, at least as far as the present provisions of the bill are concerned, by appropriations from the general fund. By means of this technique, the sponsors apparently seek to by-pass the Senate Committee on Finance and the House Committee on Ways and Means, the two congressional committees which have jurisdiction over legislation to impose taxes.

TITLE I—GRANTS TO STATES FOR HEALTH SERVICES

This title contains three parts as follows:

Part A—Grants to States for Public Health Services

This part provides for grants to states for public health services and is similar to provisions that were contained in S. 1050. It continues without change the provisions in the Public Health Service Act relating to grants for tuberculosis and venereal disease control. It amends existing provisions relating to grants for public health work in a number of respects including the removal of the limitation on the amount of federal appropriations that may be made available annually, namely, \$20,000,000. The details that a plan must contain to be approved are set forth specifically and the Surgeon General, in carrying out the duties imposed on him in relation to this part, is authorized and directed, with the approval of the Federal Security Administrator, to enter into such agreements or cooperative arrangements as may be necessary to insure coordination in the administration of programs and services under this part with those relating to grants to maternal and child health services, to crippled children services and to those contemplated under Title II of the bill.

A new definition of the term "public-health work" is proposed in the bill as follows:

"the term 'public-health work' includes customary and accepted functions, services, and activities of public-health agencies with respect to: public-health administration; training of personnel; vital statistics; sanitation of the human environment; control of communicable and preventable diseases; laboratory services; protection of health in maternity, infancy, and childhood; public-health education; public-health nursing; research and the performance of demonstrations; medical and related services for prevention or mitigation of sickness or disability and for the prevention of premature death; planning and coordination of health services and activities; enactment and enforcement of necessary standards and regulations; production or procurement, and distribution, of therapeutic and prophylactic preparations; and related matters. The term does not include: construction of hospitals, water supplies, sewerage or other waste-disposal systems, or of other facilities; operation or maintenance of hospitals (except hospitals for persons afflicted with infectious diseases), water supplies, sewerage or other waste-disposal systems; and related matters."

Part B—Maternal and Child Health Services

This part amends existing provisions in the Social Security Act relating to this subject. Under existing law \$5,820,000 is the limit that may be appropriated annually for these services. The pending bill proposes to remove this limit. It provides that state plans must make available facilities for local maternal and child health services and that a plan must be in effect in all political subdivisions of the state not later than a date ten years after the date of approval of the first state plan approved under this part. A state plan must provide, too, for cooperation with medical, health, nursing, education and welfare groups and organizations and, when necessary, "for working agreements with any public agencies administering or providing services related to the services furnished under the State plan, including public agencies concerned with nursing, education, welfare, assistance, social insurance, workmen's compensation, labor, industrial hygiene, or medical care." The existing law specifies that a state plan must provide for the development of demonstration services in needy areas and among groups in special need. The reference to "needy areas and among groups in special need" will be eliminated by the bill. A state plan must provide, too, for the furnishing of services and facilities to "all mothers and children in the State or locality who elect to participate in the benefits of the program." The Children's Bureau would continue to be the administrative agency.

Services for Crippled Children

This section of the bill would amend the provisions in the Social Security Act relating to services for crippled children. It would relate not only to crippled children but to children otherwise physically handicapped. Here again the reference in existing law to rural areas and to areas suffering from severe economic distress would be eliminated.

Under existing law the annual appropriation that may be made available for services for crippled children is limited to the sum of \$3,870,000. The bill would remove this limitation. A state plan, under the new provision in the bill, must be in effect in all political subdivisions of the state and the services and facilities must be made available to all crippled children not later than a date ten years after the date of approval of the first plan approved under this section. The bill would also provide for cooperation with the several groups as designated in the section of the bill relating to maternal and child health services. Also, the services and facilities under a state plan

must be made available to "all crippled children in the State who elect to participate in the benefits of the program." A new formula is suggested for determining the amount of federal money that will be made available to the states under this part. At the present time federal moneys are made available on a fifty-fifty basis.

The Children's Bureau will be specifically directed to make and aid the financing of such studies, demonstrations, investigations and research as will promote the efficient administration and operation of programs under this part. In such administration, the Chief of the Children's Bureau will be required to pursue general policies established by her after consultation with advisory committees composed of professional and public members which she herself will appoint with the approval of the Secretary of Labor. These advisory committees, it is contemplated, will advise the Chief of the Children's Bureau on matters pertaining to the furnishing of the care and services. The Chief of the Children's Bureau will be required, too, to consult with a conference of the state health officers and in so far as practicable must obtain the agreement of the state authorities prior to the issuance of any general policies.

The Chief of the Children's Bureau will be directed, with the approval of the Secretary of Labor, to enter into such agreements or cooperative working arrangements with the Surgeon General of the Public Health Service and with the Social Security Board as may be necessary to insure coordination in the administration of programs and services administered by her with those under the part relating to grants for public health services and the part relating to grants to states for medical care of needy persons, the latter being a new provision in the bill.

An additional appropriation for the fiscal year ending June 30, 1946 of \$5,000,000 will be authorized for the administrative expenses of the Children's Bureau and this appropriation may be used for studies, demonstrations, investigations and research, the training of personnel for federal, state and local services and the payment of salaries and expenses of personnel detailed to state agencies. Thereafter, so much will be authorized as necessary.

Part C—Grants to States for Medical Care of Needy Persons

In S. 1050, there was contained a part relating to a comprehensive public assistance program under which assistance was given to the states to aid needy individuals. This part has been modified so that it relates only to the supplying of medical care to such persons. For the fiscal year ending June 30, 1946 an appropriation of \$10,000,000 will be authorized to enable each state to provide medical care for needy persons. Thereafter so much will be authorized as may be needed. In order to participate in this program, a state must submit plans for the approval of the Social Security Board. A state plan for medical care must—

(1) provide that it shall be in effect in all political subdivisions of the state, and if administered by them, be mandatory upon them;

(2) provide for financial participation by the state;

(3) provide for the establishment or designation of a single state public assistance agency to administer or supervise the administration of the plan;

(4) provide for granting to any individual whose claim for medical care is denied, an opportunity for a fair hearing;

(5) provide for such methods of administration as found by the Social Security Board to be necessary, including methods relating to the establishment and maintenance of personnel standards on a merit basis;

(6) provide for making reports to the Social Security Board;

(7) provide safeguards which restrict the use or disclosure of information concerning recipients; and

(8) provide that the state agency shall, in determining need for medical care, take into consideration (a) the requirements of individuals claiming medical care under the plan and (b) any income and resources of an individual claiming medical care under the plan.

If a state plan fulfils the required conditions, the Social Security Board will be required to approve it but the Board

may not approve any plan which imposes as a condition of eligibility any citizenship or residence requirements or any requirement which excludes any recipient of public assistance under a state plan approved under the Social Security Act. A formula is proposed for the allotment of federal funds to the states that have plans approved by the federal agency.

In carrying out the duties imposed on it, the Social Security Board is directed, with the approval of the Federal Security Administrator, to enter into such agreements or cooperative working arrangements with the Surgeon General of the Public Health Service, and with the Chief of the Children's Bureau, as may be necessary to insure coordination in the administration of programs and services under this part with those under the part relating to grants to states for health services, the part relating to maternal and child health services and the title providing personal health service benefits.

The medical care to be furnished under this part may be provided either (1) by the state or local public assistance agency administering the plan through (a) money payments to individuals claiming such care, or (b) payments to persons or institutions furnishing such care, or (c) direct provision of such care; (2) in accordance with agreements, authorized in regulations by the Social Security Board, between such state or local agency and other agencies of the state or political subdivision thereof, by such other agencies; or (3) through arrangements by a state or local public agency with the Surgeon General for services furnished under Title II, on the basis of equitable payments to the Account established by that title; or (4) through such combination or modification of the foregoing as the Social Security Board may approve.

TITLE II—PREPAID PERSONAL HEALTH SERVICE BENEFITS

This title proposes to make available personal health service benefits to currently insured employees, to specified dependents of such employees, to individuals entitled to monthly benefits under Title II of the Social Security Act relating to old age and survivors insurance benefits, to the self-employed and to certain others. It follows closely the comparable provisions in S. 1050 and will be administered by the Surgeon General of the United States Public Health Service, under the supervision and direction of the Federal Security Administrator. He will be required to "consult" with the National Advisory Medical Policy Council on certain matters.

There will be created on the books of the Treasury Department a separate account to be known as the "Personal Health Services Account," and there will be authorized to be appropriated to this account such sums "as may be required to finance the benefits, payments, and reimbursements provided under this title." The bill, as now framed, does not indicate the method by which the sums so appropriated will be raised. Senator Wagner has indicated an intention to defer consideration of a method of financing until the Congress determines whether or not to provide the benefits contemplated by this title. In this connection, he caused to be inserted in the Congressional Record, at the time he introduced his bill, the following statement:

"A Nation-wide comprehensive prepayment medical-care plan can be financed in any one of several different ways. Premiums can, for such a purpose, be raised through income or general taxes or through pay roll contributions, or both. In either case minimum and maximum provision can be provided. The extent of a general governmental contribution out of general revenues to such a plan depends upon the comprehensiveness of the groups covered and the services provided. All in all, these problems are best decided after a decision has been reached on all the details of the medical-care plan itself. Moreover, the financial details relating to the raising of the revenue for the plan raises many special problems which have a bearing on existing income taxes and pay roll contributions and should be considered in relation to these laws.

"The bill does not, therefore, specify any particular method by which the sums authorized to be appropriated under section 212 of title II would be raised. Since under the Constitution legislation relating to the raising of revenue must originate in the House of Representatives, this matter has been left to separate legislation. There is already pending before the Congress legislation (H. R. 3293 and the companion bill S. 1050) which provides for the raising of revenue for personal health service benefits. This separation of legislation between the

revenue and benefit aspects of the program is in keeping with previous practice. In both 1935 and 1937 legislation relating to railroad retirement was considered and enacted in this way.

"It is both necessary and desirable that first and foremost consideration should be given to the benefits. If the Congress thinks that it is sound to provide prepaid medical care to the American people, the method of financing such a plan can be worked out jointly by the appropriate committees of the Congress which have jurisdiction over these matters."

Definitions

The following definitions contained in this title are identical with those contained in the earlier bill, S. 1050:

The term "personal health service benefits" is defined to include general medical benefits, special medical benefits, general dental benefits, special dental benefits, home nursing benefits, laboratory benefits and hospitalization benefits.

The term "general medical benefit" means services furnished by a legally qualified physician or by a group of such physicians, including all necessary services such as can be furnished by a physician engaged in a general or family practice of medicine, at the office, home, hospital or elsewhere, including preventive, diagnostic and therapeutic treatment and care, and periodic physical examination.

The term "special medical benefit" is defined as necessary services requiring special skill or experience, furnished at the office, home, hospital or elsewhere by a legally qualified physician who is a specialist or consultant with respect to the class of service furnished, or by a group of such physicians, or by a group of physicians including such specialists or consultants.

The term "general dental benefit" is defined to mean services furnished by a legally qualified dentist or by a group of such dentists, including all necessary dental services such as can be furnished by dentists engaged in the general practice of dentistry, with or without the aid of an assistant or hygienist under his direction, and including preventive, diagnostic and therapeutic treatment, care and advice, and periodic examinations.

The term "special dental benefit" is defined to mean necessary services requiring special skill or experience, furnished at the office, hospital or elsewhere by legally qualified dentists (with or without the aid of an assistant, hygienist or anesthetist under his direction) who is a specialist or consultant with respect to the class of service furnished, by a group of such dentists, or by a group of dentists, including such specialists or consultants.

"Home nursing benefit" means nursing care of the sick furnished in the home by (1) a registered professional nurse or (2) a practical nurse who is legally qualified by a state or, in the absence of state standards or requirements, who is qualified with respect to standards established by the Surgeon General after consultation with the Advisory Council and with competent professional nursing agencies and who furnishes nursing care under the direction or supervision of the state health agency, the health agency of a political subdivision of a state or an organization supplying and supervising the services of registered professional nurses.

The term "laboratory benefits" means such necessary laboratory or related services, supplies or commodities as the Surgeon General may determine, including chemical, bacteriologic, pathologic, diagnostic and therapeutic x-ray and related laboratory services, refractions, and other ophthalmic services furnished by a legally qualified practitioner other than a physician, physical therapy, special appliances prescribed by a physician, and eyeglasses prescribed by a physician or other legalized practitioner. If any of the services, supplies or commodities covered by this definition are provided a hospitalized patient, or by a physician or dentist incidental to services rendered, payment therefor will be included in payments for hospitalization or for services furnished, respectively.

"Hospitalization benefit" is defined to mean an amount, as determined by the Surgeon General after consultation with the Advisory Council: not less than \$3 and not more than \$7 for each day of hospitalization not in excess of thirty days in a period of hospitalization, not less than \$1.50 and not more than \$4.50 for each day of hospitalization in excess of thirty days in a period of hospitalization, and not less than \$1.50 and not

more than \$3.50 for each day of care in an institution for the care of the "chronic sick." In lieu of such compensation, the Surgeon General may enter into contracts with participating hospitals for the payment of the reasonable cost of hospital service at rates for each day of hospitalization neither less than the minimum nor more than the maximum applicable rates previously mentioned, such payment to be full reimbursement for the cost of essential hospital service, including the use of ward or other least expensive facilities compatible with the proper care of the patient.

Any such payment may be included in a contract between the Surgeon General and a participating hospital for inclusive services of a participating hospital and its staff or attending staff. Such payment will not affect the right of participating hospitals to require payments from patients with respect to the additional cost of more expensive facilities furnished for lack of ward facilities or occupied at the request of the patient, or with respect to services not included within a contract.

A hospital may become a "participating hospital" if it is an institution which provides all necessary and customary hospital services and is found by the Surgeon General to afford professional service, personnel and equipment adequate to promote the health and safety of individuals customarily hospitalized in such institutions. The Surgeon General may accredit a hospital for limited varieties of cases and may accredit an institution for the care of the "chronic sick," taking into account, for the purpose of such limited accrediting, the type and size of the community which the institution serves, the availability of other hospital facilities and such other matters as the Surgeon General may deem relevant.

National Advisory Medical Policy Council

A National Advisory Medical Policy Council will be created to consist of the Surgeon General as chairman and sixteen members appointed by him without regard to the Civil Service laws and subject to the approval of the Federal Security Administrator. The appointed members will be selected from panels of names submitted by professional and other agencies and organizations concerned with medical, dental and nursing services and education and with the operation of hospitals and laboratories and from among other persons, agencies or organizations informed on the need for or provision of medical, dental, nursing, hospital, laboratory or related services and benefits. The membership of the Advisory Council must include (1) medical and other professional representatives and (2) public representatives, in such proportions as are likely to provide fair representation to the principal interested groups that furnish and receive personal health services, having regard for the functions of the Advisory Council.

Appointed members will hold office for four years, with terms of office staggered, and will receive compensation at a rate not to exceed \$25 a day for the time spent on official business with the Council plus actual and necessary traveling expenses. The Council will be required to meet not less frequently than twice a year and whenever at least four of the members request a meeting. The Advisory Council will advise the Surgeon General with reference to questions of general policy and administration in carrying out the provisions of Title II including (1) professional standards of quality to apply to personal health service benefits; (2) designation of specialists and consultants; (3) methods and arrangements to stimulate and encourage the attainment of high standards through the services of general or family practitioners, specialists and consultants, laboratories and other auxiliary services, and through the coordination of the services of physicians and dentists with those of educational and research institutions, hospitals and public health centers, and through other means; (4) standards to apply to participating hospitals, to the relations or coordination among hospitals and to the establishment and maintenance of the list of participating hospitals; (5) adequate and suitable methods and arrangements of paying for personal health service benefits; (6) studies and surveys of personal health services and of the quality and adequacy of such services; and (7) grants-in-aid for professional education and research projects. The Advisory Council will be required to establish special advisory, technical, regional, or local committees or commissions whose membership may include members of the Council or other persons or both, to advise on

general or special questions, professional and technical subjects, questions concerning administration, problems affecting regions or localities, and related matters.

Selection of Physicians; Acceptance of Patients; Panels

The Surgeon General will be required to publish and otherwise make known in each local area to individuals entitled to benefits the names of medical and dental practitioners and groups of practitioners who agree to furnish services as benefits and to make such lists of names readily available to individuals entitled to benefits. Such lists must include general or family practitioners and qualified specialists and consultants. With respect to qualified specialists and consultants the lists must indicate the class or classes of specialist or consultant services for which each has been qualified. Any physician, dentist or nurse legally qualified by a state to furnish any services included as personal health service benefits will be legally qualified to furnish such benefits, including any group of physicians, dentists or nurses or combinations thereof whose members are similarly qualified.

Likewise a beneficiary may select any practitioner appearing on a panel to treat him subject to the consent of the practitioner or the group of practitioners, as the case may be. This freedom of choice of practitioner is conditioned, however, on the right of the Surgeon General, "in order to maintain high standards in the quality of services furnished as medical or dental benefit," to prescribe maximum limits to the number of potential beneficiaries for whom a practitioner or group of practitioners may undertake to furnish services, and such limits may be nationally uniform or may be adapted to take account of "relevant factors." Every beneficiary and every group of beneficiaries will be permitted to make selection of a practitioner through a representative of his or its own choosing.

The services of specialists or consultants will ordinarily be available only on the advice of the general or family practitioner or of a specialist or consultant attending the individual. Such services will also be made available "when requested by an individual entitled to specialist and consultant services as benefits and approved by a medical administrative officer appointed by the Surgeon General."

The Surgeon General will designate what shall constitute specialist or consultant services. He will likewise determine who are qualified to render such services, in accordance with general standards prescribed by him after consultation with the Advisory Council. In establishing standards and in designating specialists and consultants, the Surgeon General will be required, "as far as is consistent with the purposes of this title," to "utilize standards and certifications developed by competent professional agencies" and must "take into account the personnel resources and needs of regions and local areas."

Payments for the Services of Practitioners

Payments to general medical and family practitioners or to general dental practitioners may be made (1) on the basis of fees for services rendered, according to a fee schedule, (2) on a per capita basis, the amount being according to the number of individuals entitled to benefits who are on the practitioner's list, (3) on a salary basis, full time or part time or (4) on a combination or modification of these bases, as the Surgeon General may approve. The method of payment will apparently be determined in each local area as the majority of the general medical and family practitioners or of the general dental practitioners, respectively, may elect. The Surgeon General may also make payments by another method from the one selected in a local area to those general medical and family practitioners or general dental practitioners who do not elect the method designated by the majority. Any of the methods of making payments indicated in the foregoing may be used, as the Surgeon General may approve, in making payment to groups of practitioners that contain designated specialists or consultants as well as general or family practitioners. The Surgeon General may negotiate agreements or cooperative working arrangements to utilize inclusive services of hospitals and their staffs or attending staffs and may enter into contracts for such inclusive services.

Payments to designated specialists and consultants may be made on the basis of salary (whole time or part time), per session, fee for service, per capita or other basis or combination, as the Surgeon General and the specialists and consultants may agree.

Rates or amounts of payment for particular services or classes of services may be nationally uniform or may be adapted to take account of relevant regional or local conditions and other factors. Payments shall be adequate, "especially in terms of annual income or its equivalent and by reference to annual income customarily received among physicians, dentists and nurses, having regard for age, specialization and type of community." Payment will be commensurate with skill, experience and responsibility involved in furnishing service. In any local area where payment for services of a general or family practitioner is only on a per capita basis, the Surgeon General, the bill proposes, shall make per capita payments on a pro rata basis among the practitioners and groups of practitioners of the local area on the panel with respect to those individuals who after due notice have failed to select a general or family practitioner or who, having made one or more successive selections, have been refused by the practitioner or practitioners selected.

In each local area the provision of general medical or dental benefits will be a collective responsibility of all qualified general medical or family practitioners or of all qualified general dental practitioners, respectively, in the area who have undertaken to furnish such benefits.

Home Nursing Benefits

The bill provides that home nursing benefits shall ordinarily be available only on advice of a legally qualified attending physician but must be made available also when requested by an individual entitled to the benefits and when approved by a medical officer designated by the Surgeon General. The method to be used in paying for home nursing services is not clear.

List of Participating Hospitals

The Surgeon General is directed to publish a list of institutions which he finds to be participating hospitals in accordance with general standards prescribed by him after consultation with the Advisory Council. Any institution which is not included in the list, or any institution having been removed from the list, may petition the Surgeon General for a hearing. The bill provides that the Surgeon General shall exercise no supervision or control over a participating hospital unless it is owned or leased and operated by the United States. No requirement for participation by a hospital may prescribe its administration, personnel or operation.

Limitations on General Medical, General Dental, Home Nursing and Laboratory Benefits

The Surgeon General, after consultation with the Advisory Council and subject to the approval of the Administrator of the Federal Security Agency, may determine that every individual entitled to general medical, general dental or home nursing benefits may be required by the physician, dentist or nurse attending him to pay a fee with respect to the first service or with respect to each service in a period of sickness or course of treatment if he believes that such a limitation is necessary and desirable to prevent or reduce abuses of entitlement to the benefits. The maximum amount of such fee will be fixed by the Surgeon General after consultation with the Advisory Council and with the approval of the Administrator of the Federal Security Agency. He may also limit the application of such fees to home calls, to office visits or to both.

The Surgeon General, "having regard for the adequacy of available personnel," may, after consultation with the Advisory Council and with the approval of the Administrator of the Federal Security Agency, restrict the content of the general dental, special dental or home nursing benefit. On and after July 1, 1947, however, the restricted content of the general dental or special dental benefit must include at least (1) examination (including x-rays) and diagnosis, (2) prophylaxis, (3) extraction of teeth which are considered by the dentist and an attending physician to be or likely to be injurious to the gen-

eral health of the individual and (4) treatment of acute diseases of the teeth, their supporting structures and adjacent parts, including fractures of the teeth or jaw. He may also fix an age above which the restriction on content shall apply.

As to the home nursing benefits, restriction of content may limit the service to part time care on an hourly or visit basis or may limit the types of cases for which such benefits shall be available, or the maximum amount of service per case, or otherwise.

The maximum number of days in any benefit year for which an individual may be entitled to hospitalization will be sixty. This maximum may be increased to not more than one hundred and twenty days in a calendar year if funds are adequate.

No application for hospitalization benefits will be valid with respect to any day of hospitalization if filed more than ninety days after such day, or with respect to any day of hospitalization more than thirty days following the diagnosis of tuberculosis or psychosis, or with respect to any day in a hospital or other institution for mental or nervous disease or tuberculosis.

Likewise the Surgeon General, after consultation with the Advisory Council and with the approval of the Federal Security Administrator, may limit for any calendar year or part thereof the cost of laboratory benefits. Such limitation may relate to a class of services, supplies or commodities, to maximum payments per beneficiary in a benefit year, to a specified fraction of the cost or to combinations thereof.

Proposed Method of Administration

The bill provides that the Surgeon General shall perform the duties imposed on him under the supervision and direction of the Federal Security Administrator and after consultation with the Advisory Council as to questions of general policy and administration. He will be authorized to take all necessary steps to arrange for the availability of the benefits provided. He will be directed, after consultation with the Advisory Council as to questions of general policy and administration and with the approval of the Administrator to negotiate and periodically to renegotiate agreements or cooperative working arrangements with appropriate agencies of the United States, or of any state or political subdivision, and with other appropriate public agencies. He may, too, make such agreements or arrangements with private persons or groups of persons to utilize their services and facilities and to pay fair reasonable and equitable compensation therefor. He may negotiate and periodically renegotiate agreements or cooperative working arrangements for the purchase or availability of supplies and commodities necessary for the benefits provided in the bill and to enter into contracts for such services, facilities, supplies and commodities. He will be specifically directed, with the approval of the Federal Security Administrator, to enter into such agreements or cooperative working arrangements with the Chief of the Children's Bureau and with the Social Security Board as may be necessary to insure coordination in the administration of programs and services under Title II with those under parts B and C of Title I.

Except with respect to state or local areas for which other arrangements have been made, the Surgeon General will be directed to appoint local area committees to aid in the administration of Title II. The members of such committees must be selected from panels of names submitted by the professional and other organizations concerned with medical, dental and nursing services and education and with the operation of hospitals and laboratories, and from other persons, agencies or organizations informed on the need for or provision of medical, dental, nursing, hospital, laboratory, or related services and benefits. The membership of such committees must include (1) medical and other professional representatives, and (2) public representatives in such proportions as are likely to provide fair representation to the principal interested groups that furnish and receive personal health services, "having regard for the functions of the local area committees." Such committees, the bill provides, must be consulted at frequent intervals and must be kept informed by the local area officers of the Public Health Service with respect to arrangements for the availability of benefits and policies to be followed. Provision is made for the appointment of similar committees by each state or local cooperating department or agency.

The Surgeon General will be directed to give priority and preference to utilizing the facilities of state and local departments or agencies on the basis of mutual agreements with such departments or agencies. He may delegate to any officer or employee of the United States Public Health Service or of any federal, state or local cooperating department or agency such of his powers and duties, except the prescribing of rules and regulations, as he may consider necessary and proper. He may, after consultation with the Social Security Board, after consultation with the Advisory Council as to questions of general policy and administration, and with the approval of the Federal Security Administrator, prescribe and publish such rules and regulations and require such records and reports, not inconsistent with other provisions of the bill, as may be necessary. Authorization is given for the appointment of such additional personnel in the Public Health Service as is necessary to administer Title II.

The Surgeon General will be required to make a full report to Congress, at the beginning of each regular session, of the administration of the functions devolved on him by the bill, and such reports must include "a record of consultation with the Advisory Council, recommendations of the Advisory Council, and comments thereon."

The bill suggests that the methods of administration, including the methods of making payments to practitioners, shall (1) include the prompt and efficient care of individuals entitled to personal health service benefits; (2) promote personal relationships between physician and patient; (3) provide professional and financial incentives for the professional advancement of practitioners and encourage high standards in the quality of services furnished as benefits; (4) aid in the prevention of disease, disability and premature death; and (5) insure the provision of adequate service with the greatest economy consistent with high standards of quality.

Grants-in-Aid for Medical Education, Research and Prevention of Disease and Disability

The Surgeon General will be authorized to administer grants-in-aid to nonprofit institutions and agencies engaging in research or in undergraduate or postgraduate professional education. Such grants will be made with respect to each project (1) for which application has been received from a nonprofit institution or agency, stating the nature of the project and giving the reasons for the need of financial assistance in carrying it out, and (2) for which the Surgeon General finds, with the advice of the Council and after consultation with other federal departments and agencies concerned with research or professional education that the project shows a promise of making valuable contributions to the education or training of persons useful to or needed in the furnishing of medical, dental, nursing, hospital, laboratory, and related benefits, or to human knowledge with respect to the cause, prevention, mitigation or method of diagnosis or treatment of disease and disability.

The Surgeon General and Advisory Council must give preference and priority, during the five year period beginning Jan. 1, 1946, to grants-in-aid with respect to projects to aid servicemen seeking postgraduate education as medical or dental practitioners or training for administration of personal health services, disability benefits, rehabilitation services and related services.

To finance this part of the program, there will be made available for the calendar year 1946 the sum of \$10,000,000, for the calendar year 1947 the sum of \$15,000,000 and for each calendar year thereafter an amount equal to 2 per cent of the amount expended for benefits under Title II in the last preceding fiscal year.

Existing Prepayment Plans

Senator Wagner reiterates the belief that S. 1606 will not necessarily result in the displacement of existing prepayment medical service and hospitalization plans.

The bill itself, however, does not specifically mention existing prepayment medical service and hospitalization plans. It does direct the Surgeon General, after consultation with the Advisory Council as to questions of general policy and administration, and with the approval of the Federal Security Administrator, to make agreements or arrangements with private agencies or institutions, or with private persons or groups of persons, to utilize their services and facilities.

Miscellaneous Provisions

Sections in the new bill, similar to those in S. 1050, (1) exempt from entitlement to benefits persons entitled to such benefits under workmen's compensation acts, (2) provide for extension of benefits to certain noninsured persons, (3) contemplate additional dental, nursing and other benefits, and (4) make benefits available to certain persons not at present within the social security system, such as employees of designated exempt organizations.

Washington Letter

(From a Special Correspondent)

Nov. 26, 1945.

Artificial Limb Firms Accused of Conspiracy

Assistant Attorney General Wendell Berge presented to a District of Columbia grand jury an indictment charging the Association of Limb Manufacturers of America, forty-five corporations and thirty-four individuals representing 75 per cent of the United States artificial limb industry, with conspiracy to fix high and unreasonable prices for artificial limbs sold to war veterans. The indictment, charging violation of the Sherman Antitrust Act, was promptly voted and returned in District of Columbia court. The indictment charges manufacturers with agreeing to fix minimum and noncompetitive prices in bids submitted to the Veterans Administration on artificial arms and legs supplied to veterans. The manufacturers are also charged with conspiring to fix identical prices to state agencies and agreeing that suppliers of artificial limb parts would refuse to sell to governmental agencies and charitable, public or private institutions that supplied artificial limbs to amputees without cost. Mr. Berge said that a substantial number of the 900,000 artificial limb wearers in the United States are war veterans. He stated that in peacetime about 25,000 amputations occur annually. The indictment says that a total annual sales volume of about \$10,000,000 in artificial limbs is divided among some 250 manufacturers having production capacity of from 15 to 1,500 annually.

Chairman Augustine B. Kelley, Democrat of Pennsylvania, of the House subcommittee on aid to the physically handicapped, said his committee had asked the Justice Department to make the investigation which resulted in the indictment. Further, he stated, it is at his committee's request that the Federal Trade Commission will meet with members of the Association of Limb Manufacturers of America on December 1 in Chicago to set up a "code of ethics" in advertising and salesmanship.

Political Pressure in Veterans' Hospital Sites

The first indication of opposition to Gen. Omar N. Bradley's plan to set up new Veterans Administration hospitals where they will do the most good for veterans rather than where it is expedient for political or geographic patronage has been revealed. Senator Elmer Thomas, Democrat of Oklahoma, has sent a virtual "ultimatum" to General Bradley requesting that the veterans agency take over the 750 bed Glennan Army Hospital at Okmulgee, Okla., which is being closed in the next few days. In taking a stand against "pork barrel politics," said to have been a major factor in the location of veterans' hospitals under the régime of former Veterans Administration Director General Hines, both General Bradley and his acting surgeon general, Major Gen. Paul R. Hawley, have repeatedly emphasized that the interest of the veterans comes first. Their policy calls for setting up new major hospitals in or adjacent to large urban centers so that veterans' hospitals can take advantage of teaching facilities and faculties of large medical centers.

Salaries of \$12,000 to \$15,000 Proposed for Scientists

Dr. Vannevar Bush, director of the Office of Scientific Research and Development, told the Senate Civil Service Committee that two new scientific classifications should be set up in civil service, one for salaries from \$12,000 to \$14,000 a year and the other for \$15,000. Endorsing the federal pay raise bill, he said these salaries were necessary to attract scientists to maintain "adequate preparedness on a scientific basis." Even on this basis, he said, the government would be paying less than industry for scientific workers doing comparable tasks.

Return of Doctors and Dentists from the Armed Forces

Coincident with the announcement by the Secretary of War Patterson that an effort would be made into the need for doctors and dentists now in the Army, Major Gen. Norman T. Kirk, Surgeon General of the Army, announced that the Army expects to discharge all but 11,000 doctors by next June. General Kirk said that keeping doctors in service now is required by the fact that there will be some 220,000 patients still in U. S. Army hospitals as of January 1. By that date he expects that some 14,000 doctors, which is more than one third the number of doctors in the Army Medical Corps at peak strength, will have returned to civilian practice. Mr. Patterson's promise of an inquiry in regard to the number of doctors and dentists now held in service came in response to a charge by Senator Reed, Republican of Kansas, that the Army is holding these men unnecessarily. Army medical officers will continue to be released under previously announced standards, but a further announcement concerning them will be forthcoming around mid-December.

Army Prosthetics Program

Following indictment of national artificial limbs concerns for alleged violation of antitrust laws, the War Department released findings of three specialists who praised the army prosthetics program. They ridiculed charges made in and out of Congress that the Army had supplied limbs of "cheapest" possible construction and declared that amputees get the most costly types obtained from civilian shops. The report was made by a civilian consultant committee composed of Dr. Harold Conn, Akron, Ohio, Dr. Paul B. Magnuson, associate professor of surgery, Northwestern University Medical School, Chicago, and new chief of the Veterans Administration Research Section, and Dr. Philip D. Wilson, clinical professor of orthopedic surgery, Columbia University College of Physicians and Surgeons, New York.

Tuberculosis Rate Among Veterans Reported Very High

Mrs. Elizabeth H. Breeze, Veterans Administration nurse recruitment specialist, said that a "very high" tuberculosis rate among returning veterans has caused a dangerous situation through the lack of nurses trained for the treatment of tuberculosis. She said the percentage of veterans infected with tuberculosis is higher than one ever imagined, revealing that only 12 out of 2,000 nurses queried have shown an interest in the care of tuberculous patients or said they had any training for it.

River Pollution Discussed by House Rivers and Harbors Committee

The annual appropriation of \$100,000,000 to purify the nation's rivers was discussed Tuesday when the House Rivers and Harbors Committee considered a bill sponsored by Representative Spence, Democrat of Kentucky, providing for a water pollution advisory board under the jurisdiction of the U. S. Public Health Service, and agreements between states to prevent dumping of waste and sewage into rivers. Under the Spence bill the U. S. Public Health Service would be empowered to take cases to court when nuisances were not abated.

Senate Committee Reports Favorably on Federal Health Programs

The Senate Civil Service Committee has reported favorably on the Randolph bill to set up health programs in government agencies. Sponsored in the House by Representative Randolph, Democrat of West Virginia, the measure would authorize agencies to establish health services and clinics after consultation with the U. S. Public Health Service. Benefits would be limited to treatment of minor illnesses. An amendment by Senator Hickenlooper, Republican of Iowa, would bar health units where there were only a few workers.

Returning Veterans Urged to Become Pharmacists

A reported shortage of 8,000 for jobs in the field of pharmacy was cited by Dean W. P. Briggs of George Washington University School of Pharmacy to back up his appeal to returning servicemen to consider careers in pharmacy.

Walter Bura Heads Veterans Prosthetic Appliance Service

Walter Bura, 31, retired engineer who lost his leg above the knee in a diving accident five years ago, has been appointed director of the Veterans Administration prosthetic appliance service. He is credited with "revolutionizing" the Army's artificial limb program. He claims that artificial limbs made today are good but that amputees have not been taught how to use them.

Child Care Centers to Operate Until March 1

A Senate appropriations subcommittee has approved, without opposition, expenditure of \$5,415,000 to operate wartime child care centers for another four months. The Federal Works Agency had planned to close the centers October 31, but mothers of the nation raised such a protest that President Truman asked Congress to allow the centers to operate pending study of their need in peacetime.

Licensing of Practical Nurses Proposed

A bill submitted by Charles D. Drayton, attorney for the Graduate Nurses Association, would require all men and women engaged in any form of practical nursing assistance to obtain a \$10 a year license from the Nurses' Examining Board. The bill was rejected some months ago by the District of Columbia commissioners, but a hearing has been ordered to get the opinions of all interested persons.

Bill Would Provide Seeing-Eye Dogs for Blinded War Veterans

Senator Wagner, Democrat of New York, has introduced an amendment to a bill providing for purchase and training of seeing-eye dogs that would provide these dogs to all war blinded veterans before their discharge.

Official Notes

APPLICATIONS FOR GRANTS TO AID IN CLINICAL RESEARCH

The Committee on Scientific Research of the American Medical Association invites applications for grants of money to aid in research in problems bearing more or less directly on clinical medicine. Preference is given to requests for moderate amounts to meet specific needs. As a rule grants are not made for the purchase of equipment or apparatus of a permanent nature. For application forms and further information, please address the committee at 535 North Dearborn Street, Chicago 10.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

The Forty-Second Annual Congress on Medical Education and Licensure will be held on Monday and Tuesday, Feb. 11 and 12, 1946 at the Palmer House in Chicago. Monday's session will deal primarily with problems in medical education at the undergraduate, graduate and postgraduate levels. Tuesday will be devoted mainly to questions of licensure. It is imperative that hotel reservations be made at once.

Coming Medical Meetings

American Medical Association House of Delegates, Chicago, Dec. 3-6. Dr. Olin West, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, Chicago, Dec. 10-11. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Society of Anesthetists, New York, Dec. 12-13. Dr. McKinnie L. Phelps, 745 Fifth Ave., New York 22, Secretary.

International College of Surgeons, U. S. Chapter, Washington, D. C., Dec. 7-8. Dr. Louis J. Gariepy, 16401 Grand River Avenue, Detroit, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-16. Dr. Rafael A. Vilar, P. O. Box 2866, Santurce, Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 4-6. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Medical Legislation

MEDICAL BILLS IN CONGRESS

National Health Act of 1945

Senator Wagner, New York, for himself and Senator Murray, Montana, has introduced S. 1606, proposing to enact a National Health Act of 1945. A companion bill was introduced in the House by Representative Dingell, Michigan, H. R. 4730. This legislation is analyzed in detail in this issue of THE JOURNAL. It proposes additional grants to the states for public health services, for maternal and child health services and for services for crippled children. In addition, it proposes grants to states for medical care of needy persons and provides for prepayment personal health service benefits.

Veterans Administration

After extended hearings on the bill introduced, by request, by Representative Rankin, Mississippi, H. R. 4225, to establish a Department of Medicine and Surgery in the Veterans Administration, the House Committee on World War Veterans' Legislation has caused to be introduced a new bill, H. R. 4717, which has now been reported to the House with recommendation that it pass. Among other things, the new bill would eliminate the provision in the original bill with respect to the creation of the several corps and would provide that the Department of Medicine and Surgery shall include a Chief Medical Director, Medical Service, Dental Service, Nursing Service and Auxiliary Service. The Chief Medical Director and the Deputy Medical Director must be qualified doctors of medicine. Apparently all other medical personnel of the Department of Medicine and Surgery must hold either the degree of doctor of medicine or doctor of osteopathy, thereby specifically authorizing the utilization of osteopathic services in connection with the treatment of veterans.

President Truman has submitted a supplemental estimate of appropriation for the Veterans Administration in the amount of \$158,320,000 to permit the completion of the hospital construction program for the fiscal year 1946 "providing approximately 14,100 additional hospital beds and to make possible the undertaking of the additional construction program for the fiscal year 1946 providing approximately 15,500 additional hospital and domiciliary beds" (H. Doc. 345).

A bill introduced by Representative Hedrick, West Virginia, H. R. 4679, provides compensation for veterans of World War II who have had pulmonary tuberculosis.

Miscellaneous

Senator Reed, Kansas, has submitted S. Res. 184, requesting the Secretary of War to appoint a board to make inquiry into the demobilization of physicians and dentists.

H. R. 4564, introduced by Representative Robinson, Utah, would authorize the Secretary of War to convey certain land situated within the Fort Douglas Military Reservation to the Shriners' Hospitals for Crippled Children.

An appropriation of \$1,000,000,000 for each of three fiscal years would be authorized by H. R. 4151, introduced by Representative Stigler, Oklahoma, to be used by the Federal Works Administrator in making loans and grants to public agencies for public works projects, including hospitals and nurses' homes.

The bill providing for a health program for government employees, H. R. 2716, has been reported to the Senate with amendments.

District of Columbia

Representative Hebert, Louisiana, has introduced H. R. 4456, to regulate the practice of optometry in the District of Columbia. This bill would declare optometry to be a learned profession and would define it "as the science and art devoted to the examination of the eyes, the analysis of the ocular functions and the employment of lenses, prisms, ocular exercises, visual training, orthoptics, preventive or corrective optometric methods, and agents for the relief of visual and ocular anomalies."

Medical News

(PHYSICIANS WILL CONFERR A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS REFLECT TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Housman Denied License.—The state board of medical examiners, at its meeting in Sacramento October 17, denied the restoration of his license to practice medicine in California to Dr. Nathan S. Housman, San Francisco. The physician's license had been revoked after he was convicted of keeping improper narcotic records and of perjury in his testimony at the trial (THE JOURNAL, February 10, p. 345).

Changes in Health Personnel.—Dr. George F. O'Brien, Sacramento, has been appointed health officer of Stanislaus County to succeed Dr. J. Lyle Spelman, Ceneca, resigned.—Dr. Martin Karr, San Mateo, has been employed as medical officer in the bureau of maternal and child health and assigned to the bureau of vocational rehabilitation, state department of education, where he will give assistance in developing the new physical restoration program of that agency along the lines of the medical care programs of the department of public health.

Refresher Course in Psychiatry.—Beginning January 7, a refresher course in psychiatry for physicians returning from military service will be offered at the Langley Porter Clinic, University of California Medical School, San Francisco. Instruction will be given under the direction of Dr. Karl M. Bowman, professor of psychiatry, at the University of California Medical School, with the assistance of staff members from other divisions of the medical school. Subjects to be covered will include general psychiatry, functional and organic psychoses, psychoneuroses, therapy, psychosomatic problems, neuroanatomy, clinical neurology, neuropathology, x-ray diagnosis, and other related topics. Registration is open to graduates of approved medical schools with nine months' general internship. Preference will be given to applicants with training in psychiatry, to those preparing for examination of the American Board of Psychiatry and Neurology, to graduates of the University of California Medical School, and to legal residents of the state of California. Immediate application for registration is recommended because of the limited enrollment which can be accommodated. Application should be made by letter containing the following information: place of legal residence, medical school attended and date of graduation, experience and training, with special details regarding psychiatric training and record of military service. Additional information may be obtained from University Extension, University of California, 540 Powell Street, San Francisco 2.

CONNECTICUT

Personal.—Dr. James S. Martin has retired as physician at the Taft School, Watertown, after thirty-nine years of service, according to the New York Times.

Cancer Grants.—The total of \$41,835 has been made available by the Connecticut Cancer Society to hospitals and communities in Connecticut to aid in the development and expansion of local cancer control programs. The grants will be used for clinical research in hospitals of the state and for specialized nursing and social work personnel. The medical advisory committee of the society considers each request for funds, and allotments are made only for those projects which this committee approves.

Physicians on Board for Inebriates.—Dr. Thomas P. Murdock, Meriden, formerly president of the Connecticut State Medical Society, and Dr. Arthur H. Jackson, Waterbury, are the physician members of newly appointed board of trustees of the Connecticut State Fund for Inebriates. According to an announcement, Connecticut is the first state to enact "sound legislation for the study, care and treatment of alcoholics and to provide for the creation of a board which is authorized to make a study of the problem of alcoholism, to make its findings public, to set up diagnostic and rehabilitation centers and to conduct outpatient clinics." The program will be financed by a fund to which will revert 9 per cent of all income from liquor license permits. Selden D. Bacon, Ph.D., of the department of sociology and the School of Alcohol Studies, Yale

University, is chairman of the board, and the remaining members are Mrs. Edna A. F. Edgerton, representative in the state legislature, and Abraham S. Ullman, state's attorney in New Haven.

DISTRICT OF COLUMBIA

Wallace Yater Resigns from Georgetown.—Dr. Wallace M. Yater, formerly chairman of the Section on Experimental Medicine and Therapeutics of the American Medical Association, has resigned as professor and director of the department of medicine at Georgetown University School of Medicine, Washington. Dr. Yater, who has been editor of the *Medical Annals of the District of Columbia* since its inception in 1932, has been associated with Georgetown for many years, serving the last fifteen as professor. He is also retiring as head of the department of medicine at Georgetown University Hospital and of Gallinger Municipal Hospital.

GEORGIA

Pediatric Meeting.—The Georgia Pediatric Society will hold its annual meeting in Atlanta, December 13. Among the speakers will be Drs. Carl H. Smith, New York, on "The Recognition of the Mild Case of Mediterranean (Cooley's) Anemia"; Helen B. Taussig, Baltimore, "The Management of Patients with Acute Rheumatic Fever," and Ernest C. Faust, Ph.D., New Orleans, "Diagnosis and Treatment of the Intestinal Parasites of the Southern Child." The secretary of the Medical Association of Georgia, Dr. Edgar D. Shanks, Atlanta, and the president of the Fulton County Medical Society, Dr. Joseph C. Massee, both of Atlanta, will speak.

Faculty Changes at Emory.—Dr. William C. Warren, associate professor of clinical otorhinolaryngology and chief of the clinical department, Emory University School of Medicine, Atlanta, has been appointed professor of otology and rhinology and chairman of the department to succeed Dr. James C. McDougall. Dr. Robert M. Paty, Porterdale, has been named professor of surgery and acting head of the department. He will continue as associate dean of the medical school. Dr. Russell Oppenheimer, who recently retired as dean of Emory University School of Medicine, Atlanta, has returned to the school after a three months leave to take over his activities as full time professor of clinical medicine. Dr. Francis P. Parker has returned to the school as assistant professor of pathology, the position which he held prior to entering military service three years ago.

ILLINOIS

Society Breaks Ninety-Nine Year Old Precedent.—For the first time in the ninety-nine years of the Aesculapian Society of Wabash Valley, the group met for its annual meeting elsewhere than in Paris. The meeting was held in Danville October 25. Among the speakers were Drs. Arthur R. Brandenberger, Danville, on "The Use and Abuse of Penicillin," and John T. Belting, Charleston, on "Indications and Some Technics for Open Reductions of Fractures."

Chicago

Implications of the Atomic Bomb.—Capt. Edward L. Bortz (MC), U.S.N.R., will discuss "Implications of the Atomic Bomb" before the North Side Branch of the Chicago Medical Society, December 6, in the Drake Hotel.

Personal.—Dr. Max Cutler, director of the Chicago Tumor Institute, has been named an honorary member of the Cuban Radiological Society.—Dr. Frederick Tice has resigned as president of the board of directors of the City of Chicago Municipal Tuberculosis Sanitarium.

Annual Meeting of Institute of Medicine.—Dr. William C. Danforth, professor of obstetrics and gynecology, Northwestern University Medical School, will deliver the presidential address before the thirtieth annual meeting of the Institute of Medicine of Chicago, December 4, in the Grand Ball Room of the Palmer House. His subject will be "The Beginnings of Asepsis: The Story of a Tragic Life."

Research Fellowships at Illinois.—The Graduate School of the University of Illinois has established four research fellowships to be awarded for one year in the fields of medicine, dentistry and pharmacy at a stipend of \$1,200 a year (calendar year with one month's vacation). Fellows are eligible for reappointment in competition with the new applicants. Candidates should indicate the field of research in which they are interested and submit complete transcripts of their scholastic credits, together with the names of three former

science teachers as references. Appointments will be announced January 1 or soon thereafter each year. The fellowship year begins September 1. Formal application blanks may be secured from the secretary of the Committee on Graduate Work in Medicine, Dentistry and Pharmacy, 1853 West Polk Street, Chicago 12.

KENTUCKY

Bas Relief of Dr. McCormack.—The bas relief of the late Dr. Arthur T. McCormack, for many years secretary of the Kentucky State Health Department and of the state medical association, was exhibited during the recent meeting of the state association. The bronze is the work of Dr. Waller O. Bullock, Lexington, and matches the bronze of Dr. Joseph N. McCormack, father, also a physician who aided in organization of the state board of health, serving as secretary for many years. It will be placed in the State Health Department Building at Louisville as a gift of Dr. Bullock.

State Medical Election—First Distinguished Award.—Dr. Elbert W. Jackson, Paducah, was chosen president-elect of the Kentucky State Medical Association during the annual meeting in Lexington October 31. Dr. J. Watts Stovall, Grayson, was installed as president. Other officers include Drs. Francis Guy Aud, Louisville, John M. Rees, Cynthiana, and Hugh L. Houston, Murray, vice presidents. Dr. William C. Bailey, Harlan, is delegate to the American Medical Association. Dr. Samuel H. Flowers, Middlesboro, was named orator in surgery for the state society meeting in 1946 and Dr. Samuel A. Overstreet, Louisville, orator in medicine. The association voted to raise its dues from \$5 to \$15 a year and recommended that the state legislature be asked to set aside a revolving fund of \$50,000 to \$75,000 for the training of rural doctors. The money would be lent to young men and women who pledged themselves to practice in rural areas and would be repaid by the borrowers. The first award of the association's Distinguished Service Medal (*THE JOURNAL*, May 26, p. 299) was made to Dr. Carl C. Howard, Glasgow, who is credited with starting the movement which led to a state plan for building five tuberculosis hospitals in the state.

LOUISIANA

Prizes to Students.—Dr. Benjamin T. Galloway Jr. recently received the Walter Reed Memorial Medal, given by the Louisiana State Medical Society to the graduate presenting the best thesis either on tropical or on preventive medicine. Dr. Galloway's subject was "Extraintestinal Amebiasis and Its Diagnosis." Other prizes included the Querens-Rives-Shore Award to Dr. Andreas V. N. Mortensen for his work on "Relation of Hypertension to Vascular Disease," the Jacob C. Geiger medal to Dr. Mitchell Ede for his work on "The Value of Influenza Vaccination" and the Sidney K. Simon Memorial Prize to Dr. Leo E. Johns Jr. for his work on "Regional Ilicitis." Dr. Thomas G. Baffes received the Isadore Dyer medal, which is given to the student making the highest combined average for the four years.

MARYLAND

Tuberculosis Campaign Launched.—Health and welfare officials from Maryland, Virginia and the District of Columbia met at Glenn Dale Sanatorium October 25 to organize a permanent conference tending to control tuberculosis in the area. Dr. Herman Hilleboe, medical director in charge of the tuberculosis control division of the U. S. Public Health Service, outlined a "perfect program of tuberculosis control" for a city of Washington's size, major objectives of which include development of research to ascertain needs and facilities, increased case finding work to detect new cases before they are far advanced, sufficient beds, closer cooperation between welfare and health agencies in order to solve social and economic problems, which often block possible cure, and an extension and expansion of the rehabilitation program.

Faculty News.—Lieut. Col. Walter L. Kilby, after an absence of more than three years overseas with the 142d General Hospital, has returned and resumed his duties as professor of roentgenology in the University of Maryland School of Medicine and director of the department of roentgenology in the University Hospital. Col. Walter D. Wise recently was released from active duty with the armed forces and has resumed his position as a professor of surgery at the University of Maryland and chief of staff of the Mercy Hospital, Baltimore. Colonel Wise served for sixteen months as medical director of the Maryland State Selective Service and from August 11 until relief from active duty as consulting surgeon for the Third Service Command. Lieut. Col. Daniel

James Greiner has returned from more than three and one-half years overseas as a member of the 142d General Hospital in the Fiji Islands, on Bougainville and in Calcutta, India, to take up his position as associate professor of pathology at the medical school. Major Harry M. Robinson Jr., who served with the 142d General Hospital, has returned to his position as assistant professor of dermatology. Dr. Frederick B. Mandeville, for eleven years professor of radiology at the Medical College of Virginia, Richmond, Va., has been appointed an associate professor of roentgenology at the medical school.

MICHIGAN

Battle Creek Sanitarium Litigation Ends.—After two years of litigation between the Battle Creek Sanitarium and the Seventh Day Adventist General Conference, a decree was entered in Calhoun County, Mich., November 6, in accordance with a compromise settlement. The Battle Creek Sanitarium emerges from this settlement under the old name of "The Battle Creek Sanitarium and Benevolent Association," free of all legal contacts with the Seventh Day Adventists. Following the sale of the main building of the Battle Creek Sanitarium to the government for conversion into the Percy Jones Hospital, patients were transferred to buildings across the street owned by the Race Betterment Foundation. The Seventh Day Adventists' General Conference laid claim to this money and the sanitarium itself, including some \$675,000 of the assets remaining after the expense of moving. The litigation was begun March 31, 1943 by Dr. John H. Kellogg. The final decree gave to the Adventists cash and some farms in Battle Creek Township in full settlement of all final and other claims against the sanitarium. A new institution called the "Michigan Sanitarium, Incorporated," with headquarters in Berrien Springs, Mich., has been established by the Adventist group. The new Battle Creek Sanitarium and Benevolent Association now operates the Battle Creek Sanitarium and has reportedly some 260 patients now in residence.

MISSOURI

William Sauer Honored on Retirement.—Dr. William E. Sauer, professor of otolaryngology at St. Louis University School of Medicine since 1925, was on account of his recent retirement awarded the Distinguished Service Professorship, the first appointment of its kind. Dr. Sauer has been director of the department of otolaryngology since 1925. He will be succeeded as director by Dr. Bernard J. McMahon, St. Louis, associate professor in the department. Other changes in the medical school include the appointment of Dr. Joseph A. Hardy, assistant professor of gynecology and obstetrics, as director of the department, filling the vacancy left by the recent death of Dr. William H. Vogt. Dr. Garold V. Stryker, assistant professor of dermatology, was named director of the department to succeed Dr. Joseph Grindon, who resigned in 1944 because of age.

NEW JERSEY

Committee Named to Study "Crippling" Diseases.—The New Jersey Crippled Children's Commission has appointed a fact finding committee to study the hospital and convalescent care facilities in the state and to recommend a plan to provide better care for victims of infantile paralysis and other crippling diseases. Arthur H. Moore, ex-governor of New Jersey, will head the committee, representing the public at large. Other members include Albert Leon, chairman of the commission; Dr. Jesse L. Mahaffey, Camden, representing the state board of health; Dr. Frederick G. Dilger, Hackensack, representing the state medical society, and Mrs. Gertrude Miller Buch and William C. Cope, acting director and secretary, respectively, of the crippled children's commission.

Nichols Medal Goes to Wendell Stanley for Virus Work.—Wendell M. Stanley, Sc.D., biochemist and member of the Rockefeller Institute for Medical Research, Princeton, is the recipient of the 1946 William H. Nichols Medal of the New York section of the American Chemical Society. The medal, which will be presented in March, was awarded to Dr. Stanley for his work in the chemistry of viruses. According to an announcement, Dr. Stanley upset the prevailing belief as to the origin of disease in 1935 when he announced that he had isolated in crystalline form a disease-producing virus and had used it to reproduce the disease. By thus showing that infectious diseases are not necessarily caused only by micro-organisms and their toxins, as had been generally supposed, he opened a new field of investigation in the fight to provide immunity against such maladies as influenza, infantile paralysis, encephalitis and the common cold.

NEW YORK

Patients to Receive Free X-Rays at Rochester General Hospital.—Beginning January 1 a chest x-ray examination will be given without charge to every patient admitted to the Rochester General Hospital. The films will be examined by a hospital radiologist and the results reported to the patient's physician.

Clinic for Rheumatic Fever.—A clinic for rheumatic fever will be opened in Rochester under the sponsorship of the Monroe County Medical Society, the city health bureau, the state department of health and the University of Rochester School of Medicine and Dentistry. The clinic will be conducted at the Rochester Municipal Hospital and will be opened to areas outside the city. Patients will be referred through private physicians. The clinic will be set up to diagnose and study rheumatic fever. Personnel for the clinic will be provided by all four of the sponsoring groups. A full time nurse to study home conditions of rheumatic patients, a secretary and several technicians will be contributed by the state department of health, and the city health bureau will supply clinic facilities and additional personnel. A committee of physicians of the Monroe County Medical Society will work in conjunction with the public health officials.

Personal.—Dr. Roy E. Reed, Fayetteville, was recently appointed health officer for the town of Manlius to succeed Dr. George J. Bryan, who will continue to serve as health officer for the village of Fayetteville, it is reported.—Dr. Frank E. Coughlin, district state health officer at Albany, has been appointed a member of the state board of medical examiners, succeeding Dr. Paul B. Brooks, Albany, whose term expired July 31.—Dr. Burtis B. Breese Jr., Rochester, has been named deputy health officer of the Rochester Health Bureau. The appointment will be effective about January 1. According to the Rochester *Times-Union*, October 19, Dr. Breese is the first of two new officers to be appointed to positions in the health bureau. He will be concerned chiefly with communicable diseases. A second health officer, who will specialize in venereal diseases, will be appointed later. Dr. Norris G. Orchard, Rochester, deputy city health officer for the last eighteen years, retired October 15 to enter private practice on Cape Cod.

New York City

The Brickner Lecture.—The twelfth Walter M. Brickner Lecture will be given at the Hospital for Joint Diseases, December 15, by Dr. Cecil K. Drinker, professor of physiology, Harvard Medical School, Boston. Dr. Drinker's subject will be "Physiology of Immobilization and the Local Effects of Heat and Cold."

Cerebral Palsy Demonstration Center Planned.—The establishment of a demonstration center in New York for the study of cerebral palsy and the treatment of spasms and children otherwise affected by injury to the brain is under consideration by the Pediatric Foundation. A campaign to raise \$1,000,000 to finance the project was launched October 2 at a meeting of the foundation in the Hotel Carlyle. The Pediatric Foundation was organized in 1944 as a nonprofit membership corporation to encourage greater use of established work for mental and physical health in early childhood (THE JOURNAL, February 24, p. 474).

Howard Rusk Joins New York Times Staff.—Dr. Howard A. Rusk, who recently resigned from the Army to serve as consultant on physical rehabilitation for the Baruch Committee on Physical Medicine, has joined the staff of the New York *Times* and will contribute articles dealing with every phase of the country's problems of "human reconversion." Beginning in December, Dr. Rusk will write on the needs and tasks of the thousands of service men now facing readjustment to civilian life. At a later date his articles will take up the rehabilitation of war workers and other civilians whose lives were radically affected by the war.

Lenox Hill Hospital Affiliates with New York University.—A teaching affiliation has been established between the New York University College of Medicine and Lenox Hill Hospital. The program will be established on the graduate and postgraduate level, as well as on the undergraduate level. For some years undergraduate elective courses have been given at Lenox Hill by the directors of the surgical services, Drs. Carl Eggers, John C. A. Gerster, Otto C. Pickhardt and DeWitt Stetten, who also hold the posts of clinical professors of surgery at New York University. In addition, the cardiac clinic at Lenox Hill, under the direction of Dr. Clarence E. de la Chapelle, assistant dean of the New York University College of Medicine, has been utilized for elective work in the junior and senior years. The new affiliation also makes possible the extension of undergraduate teach-

ing to other departments of the hospital. On the graduate level, internships, residencies and also fellowships which may be established at the hospital will carry with them eligibility for additional training in the basic sciences at the college. Opportunities for physicians already engaged in practice will also be possible through lectures, clinics and demonstrations and other forms of such courses. These are being planned by the medical board of the hospital. The medical board of Lenox Hill Hospital has created a committee on medical education to serve as the liaison between the college and the hospital in the establishment of the teaching program. Quite a number of the members of the Lenox Hill staff are already members of the New York University College of Medicine faculty, and officials of both institutions predict that this number will be increased appreciably in the coming year.

NORTH CAROLINA

State Board Acts to Expedite Licensure.—The North Carolina Board of Medical Examiners has decided to call its members together every three months during the next year to expedite the entrance of qualified medical veterans into practice, particularly for licensure by endorsement of credentials.

Changes in Health Officers.—Dr. Harold C. Whims, Newton, health officer for Catawba County, has resigned to become health officer of Buncombe County with headquarters in Asheville.—Dr. Zack P. Mitchell, Shelby, health officer of Cleveland County, has been named health officer of Iredell County.—Dr. Hamilton W. Stevens Jr., Jacksonville, is the new health officer of Wilson County, succeeding the late Dr. Wade H. Anderson, Wilson.

PENNSYLVANIA

Loan Fund Totals \$65,000.—The Veterans' Loan Fund in Pennsylvania, contributed by members of the Medical Society of the State of Pennsylvania to help members of the component county medical societies returning from World War II military service, totaled \$65,032 on October 17.

Philadelphia

Blood Bank Named for Physician Who Died in Action.—Nazareth Hospital has dedicated its newly formed blood bank in memory of Capt. Leonard J. McGee, M. C., a former intern, who was killed in action in Germany on March 24 while serving as battalion surgeon of the 194th Glider Infantry, 17th Airborne Division, according to *Philadelphia Medicine*.

Thousands for Surgical Research.—Dr. Theodore L. Chase, a retired Philadelphia surgeon, now living in Reno, Nev., has given \$450,000 to Temple University School of Medicine to establish and endow a surgical research foundation, with special emphasis on cancer, it was announced November 12. The gift was made by Dr. Chase in memory of his late wife, Dr. Agnes B. Chase, a native Philadelphian, who graduated at Temple University School of Medicine in 1919. At the request of Dr. Chase, who practiced surgery in Philadelphia for thirty-five years, "the efforts of the Agnes Barr Chase Surgical Research Foundation are to be directed to research in general surgery with the particular emphasis on the study of the cause or causes and treatment of cancer." Laboratories will be set up in the medical school, while clinical application will be pursued in the Temple University Hospital.

TEXAS

Randall Hall.—On the opening of the fall session of the University of Texas Medical Branch, Galveston, the auditorium of the Out-Patient Clinic Building was named Randall Hall in honor of Dr. Edward Randall (1860-1944) who served as professor of materia medica and therapeutics from 1891 to 1929, when he became professor emeritus and chairman of the board of regents of the University of Texas.

Grants for Research.—Sharp & Dohme, Inc., Glen Olden, Pa., have given a grant to the department of pediatrics of the University of Texas Medical Branch, Galveston, for study of sulfonamide drugs in the control of intestinal infections. The grant is to be administered by Dr. Arild E. Hansen, Galveston, professor of pediatrics and director of the child health program, with the cooperation of Dr. Edgar J. Poth, Galveston, professor of surgery, and director of the laboratory of experimental surgery, and MacDonald Fulton, Ph.D., Dallas, visiting professor of pediatric research. The Sugar Research Foundation, Inc., of New York City has made a grant of \$1,000 to support research under the direction of Wilbur A. Selle, Ph.D., Galveston, professor of physiology, University of Texas Medical Branch, Galveston, on the influence of carbohydrates on experimental liver cancer. The John and Mary

R Markle Foundation has granted \$7,000 to continue the support for two years of the study of filariasis under the direction of James Allen Scott, ScD, associate professor of epidemiology and medical statistics, at the medical school

GENERAL

Lectures on Motor Anomalies Available—Because of demand a third printing of Alfred Bielschowsky's "Lectures on Motor Anomalies" is now on sale at Dartmouth College Publications, Hanover, New Hampshire, at \$150 per copy, postpaid

Mayo Clinic Flight—Northwest Airlines announces an additional daily flight from Chicago to Rochester, Minn., which has been designated the Mayo Clinic flight. The additional trip brings to four the number now operating from Chicago to the home of the Mayo Clinic under the auspices of Northwest Airlines

Abraham Flexner Heads Scientific Sponsors of Proposed Palestine Medical School—Dr Abraham Flexner, Princeton, N. J., formerly director of the Institute for Advanced Study, Princeton, N. J., has been named head of a committee of scientists to sponsor the establishment of the Hebrew University-Hadassah Medical School on Mount Scopus, Jerusalem (THE JOURNAL, October 27, p 643). Hadassah and the Hebrew University are being guided in the planning for the medical school by a medical reference board

Friedenwald Medal Goes to Lewis Cole—The Julius Friedenwald Medal, which is presented annually by the American Gastroenterological Association, has been awarded for 1945 to Dr Lewis G Cole, White Plains, N. Y. Dr Cole, who for a number of years was professor of roentgenology at Cornell University Medical College, New York, has, among other research, carried on extensive work on the differential diagnosis of gastric ulcer and cancer of the gastrointestinal tract. He graduated at Columbia University College of Physicians and Surgeons in 1898

Winners in Modern Hospital Contest—In the essay competition on "A Plan for Improving Hospital Treatment of Psychiatric Patients," offered by *Modern Hospital*, first prize of \$500 has been awarded to Lieut. (jg) Lester Lee Hasenbush, U. S. N. R., and his wife, Grace Hasenbush, a graduate social worker, as co authors. Dr Hasenbush graduated at the Johns Hopkins University School of Medicine, Baltimore, in 1938. Gerard Victor Haigh, attendant at Norwich State Hospital, Norwich, Conn., won second prize of \$350, and third prize of \$150 went to Dr Kurt R. Eissler, captain, medical corps

Southern Hospital Council Formed—Representatives of hospitals in several Southern states met informally in Cincinnati during the sessions of the Southern Medical Association, November 12-15, and formed the "Southern Hospital Council." The object of the organization is to provide an opportunity once a year for discussion of mutual problems by doctor and lay hospital managers and administrators in the South. Meetings will be held annually on the Sunday preceding the opening session of the Southern Medical Association. A temporary organization was set up which includes Dr Robert J. Wilkinson, Huntington, as chairman, and Dr Hamilton W. McKay, Charlotte, N. C., secretary

Meetings on Clinical Research—Sectional meetings of the American Federation for Clinical Research have been announced as follows:

Southern Section, Hotel Baltimore, Atlanta, December 8
Eastern Section, Philadelphia General Hospital, December 8
1st Western Section, Salt Lake General Hospital, Salt Lake City, December 28-29

On November 1 in Chicago Dr Frederick W. Hoffbauer, Minneapolis, was elected chairman of the Mid-Western Section of the federation and Dr Kenneth G. Kohlstedt, Indianapolis, secretary. Dr Charles H. Wheeler Jr., New York, is president of the American Federation for Clinical Research and Dr Richard H. Lyons, University Hospital, Ann Arbor, Mich., secretary

Manufacturers' Award Goes to Rockefeller Institute—On December 10 special ceremonies will be held at the Waldorf-Astoria Hotel, New York, to present the seventh Annual Scientific Award of the American Pharmaceutical Manufacturers Association to the Rockefeller Institute for Medical Research. Alan Valentine, LL.D., president, University of Rochester, Rochester, N. Y., will give the presentation address on "Fundamental Research in Medical Sciences—Its Essential Importance to Public Health" and Dr Herbert S. Gasser, director of the Rockefeller Institute for Medical Research, will

give the speech of acceptance. The institute was selected for the award "in recognition of its great contributions to public health, by fundamental research in the field of the medical sciences, which is of profound and lasting value to mankind." Other speakers on the program will include:

Dr John G. Gibson II, Boston, Progress in Blood Therapy
Dr James A. Shannon, New York, Progress in Antimalarial Therapy
Se'man A. Waksman, Ph.D., New Brunswick, N. J., Progress in Antibiotic Therapy

George R. Cowgill, Ph.D., New Haven, Conn., Progress in Vitamin Therapy
Dr Sidney C. Madden, Atlanta, Ga., Progress in Amino Acid Therapy

Dr George W. Thorn, Boston, Progress in Hormone Therapy

Industrial Medicine and Surgery Meeting—The mid-winter meeting of the Central States Society of Industrial Medicine and Surgery will be held December 7 at the Palmer House, Chicago. Among the speakers will be:

Dr Urban E. Gebhardt, Milwaukee, Management of Industrial Fractures

Dr Edwin W. Ryerson, Chicago, Painful Conditions About the Shoulder Joint

Dr Leonard F. Weber, Chicago, Industrial Dermatoses

Major Frederick C. Reynolds, M. C., and Capt. Charles E. Stebbins, M. C., Chicago, Early Closure of Chronic Osteomyelitis with Split Thickness Skin Grafts

Dr Earl A. Irvin, Detroit, Psychosomatic Consultations in Industry

Dr Milton H. Kronenberg, Peoria, Ill., Reemployment of the Physically Handicapped Veteran

The morning will be devoted to a clinical session at St. Luke's Hospital

Government Services

Farewell Reception in Honor of Dr. Dunham

A farewell reception was recently held in the office of the Institute of Inter-American Affairs, Washington, in honor of Dr. George C. Dunham, who recently resigned as president of the institute because of ill health (THE JOURNAL, October 13, p. 524)

Medical Library News

The *Army Medical Library News* made its appearance with the November issue, supplanting the former *News Letter*. The *News* has been made possible by the Association of Honorary Consultants to the Army Medical Library. At the recent annual meeting of the association Dr. John F. Fulton, New Haven, Conn., was elected president, Chauncey D. Leake, Ph.D., Galveston, Texas, vice president and Col. Harold W. Jones, Washington, D. C., secretary treasurer

Korean Physicians Arrive for Training

American scientific aid for the people of Korea was inaugurated November 7 at a conference among nine Korean physicians and officers of the Civil Public Health Division of the Army Medical Department. The entire expense of the group while in the United States will be borne by the International Health Division of the Rockefeller Foundation. Flown to the United States from Korea, members of the study group include Drs. Long Woen Whong, Chang Soon Choi, In Ho Chu, Pum Suk Han, Dong Chul Kim, Myong Gong Choi, Hyong Nai Song, Haeng In Paik and Yu Sun Yun. A tenth member, Dr. Chai Chang Choi, left the group at Honolulu because of lack of transportation facilities and was to go directly to the University of Michigan within a few days. The Korean physicians will be trained individually in civil public health, epidemiology, preventive medicine, bacteriology, immunology, parasitology and special health problems of Korea. Three will go to Johns Hopkins University School of Medicine, three to Harvard Medical School and four to the University of Michigan Medical School. In a statement to the press Major Gen. Norman T. Kirk, Surgeon General, United States Army, stated that the purpose of the year's training is "to lay the foundation for a self-sufficient medical service for the Korean nation. For more than thirty years the Japanese have dominated all medical and other scientific work in Korea as well as its national and local government affairs. No Korean has been allowed to serve in a position of responsibility in the nation or in his own community. It is the hope of the Rockefeller Foundation and ourselves that these men will form the nucleus of a new medical service for the people of their country, and if earnestness and enthusiasm are true criteria they will succeed."

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 27, 1945.

Penicillin in Ophthalmology

Professor Arnold Sorsby spoke at the Section of Ophthalmology of the Royal Society of Medicine on penicillin in ophthalmology. Although penicillin is commonly regarded as nontoxic and readily diffusible, these qualities do not apply to its ophthalmologic use. It is possible to give penicillin in daily subconjunctival injections if the total dosage is not more than 500 or 600 units. Professor Sorsby has observed only 1 case of allergic reaction—in an infant with ophthalmia neonatorum; the instillation of a drop of penicillin into each eye caused severe edema of the lids. Penicillin used locally was effective for the organisms in ophthalmia neonatorum. In 98 cases using 2,500 units of penicillin per cubic centimeter there were 78 cures, 13 relapses and 7 failures. The frequency of instillation as well as the concentration used was important. When penicillin was applied at intervals of an hour the results were good; at intervals of half an hour they were better, at intervals of five minutes better still. For technical reasons it was not possible to institute the constant drip, and Professor Sorsby now uses the procedure of instilling penicillin at intervals of one minute and in most cases the condition is under control within half an hour.

Penicillin has been used in a variety of eye conditions. Control of hypopyon ulcer has been obtained with penicillin drops. One would not expect penicillin to be effective in trachoma, as trachoma is a virus infection. Professor Sorsby has used penicillin in 3 cases of trachoma but in only 1, a fresh case, was a good result rapidly obtained. In 1 case of sympathetic ophthalmia the result was not encouraging. In iridocyclitis the results reported were not significant. Penicillin is a powerful agent but a limited one. It does not readily penetrate into the eye. As a local application in external infections it was of extreme value. Unlike the sulfonamides, it is not inactivated by pus and so can be used locally where the sulfonamides fail. But in intraocular inflammation the sulfonamides have not proved beneficial, and penicillin was not likely to be helpful either.

Bronchopneumonia with Radiologic Diagnosis of Tuberculosis

A case of bronchopneumonia radiologically diagnosed as tuberculosis is recorded in the *Clinical Proceedings of Cape Town Postgraduate Medical Association* by Major S. K. Montgomery. A native soldier aged 26 was admitted to a military hospital on July 12, 1944 with a provisional diagnosis of asthma and chronic bronchitis. For nine months he had had frequent bouts of tightness of the chest and wheezing lasting for a few weeks. He had lost weight and energy and had night sweats. He later gave a history of hemoptysis in 1943, for which he had been treated in a military hospital. For two years previous to his enlistment he worked underground in a coal mine. Since February 1942 there had been cough, producing a small amount of sputum.

On examination the temperature was 99.8 F., the pulse rate 108 and the respiratory rate 24. There were multiple scattered rhonchi in both lungs, mainly expiratory. There was no bronchial breathing. From July 12 to 20, 1944 there was moderate pyrexia, which then subsided. Hemoptysis was observed on July 12 and 22. Night sweats also occurred. X-ray examination on July 17 revealed that the diaphragm moved freely. In all zones of both lungs there was soft confluent infiltration with cavities visible on the screen in the right lower zone and the left upper zone. The appearance was very suggestive of bilat-

eral pulmonary tuberculosis. The sputum examination was negative for tubercle bacilli. The blood sedimentation rate was 12 mm. in one and one-half hours. On August 28 there were numerous rales and rhonchi throughout both lungs and the patient's general condition had greatly improved. X-ray examination revealed that the patchy shadowing seen at the previous examination was no longer present. The lungs appeared normally clear but with some increased vascular shadowing. The examination suggested a catarrhal chest, and there was no infiltration of the type associated with pulmonary tuberculosis.

The case shows how easy it is to mistake simple bronchopneumonia for tuberculosis of a bronchopneumonic type. The diagnosis was influenced by the fact that there appeared to be small cavities on screening. Pseudocavitation has been noted previously in connection with virus or primary atypical pneumonia. On review of the first film it was noted that although there was widespread confluent shadowing in patches throughout both lungs there were no rosette-like infiltrating shadows so typical of pulmonary tuberculosis. In bronchopneumonic pulmonary tuberculosis it is unusual for these to be entirely absent. Their absence should have led to greater caution in the diagnosis of tuberculosis.

PARIS

(From Our Regular Correspondent)

Oct. 14, 1945.

Medical Fees

The question of medical fees included in the social security plan has recently been discussed. At a meeting of the representatives of the social security institutions, the ministers of public health, of labor and of national economy and the Physicians' Syndicate the following agreement was reached: The syndicate of physicians shall establish fees, but it must do so in agreement with the regional institutions of social security, which set these fees in their special conventions. These conventions must be ratified by a tripartite commission the composition of which shall be one third doctors, one third representatives of the organizations of social security and one third representatives of the ministers of public health, labor and national economy. If the tripartite commission does not agree with the arrangement concerning the rates of fees arrived at by the doctors and the institutions of social security, it can veto it when necessary in the general interest. In this event it returns the plan to the interested parties without fixing a schedule; the commission is entitled to do this only in the case of a second adjournment.

Charges above the agreed fees are allowed when justified by the services rendered, the standing of the patient and other valid reasons. The protest against overcharges will be submitted to a commission comprising a doctor-inspector and a nonmedical representative of a social insurance institution on the one hand and two representatives of the syndicate of physicians on the other. If the commission finds that there is an abuse, the complaint will be settled by professional jurisdiction. The social security bill has been passed by the Consultative Assembly. The provisional government has approved it and the act appeared in the *Journal officiel*.

Recurrent Fever in North Africa

On July 31 Edouard Benhamou presented to the Académie de médecine a memorandum on the epidemic of recurrent fever now prevailing in North Africa, affecting 50,000 persons, mostly natives. Treatment with neosarsphenamine injected intravenously has given excellent results. Only one injection of 0.6 cc. at the end of the first febrile curve, on about the fourth or the fifth day, is effective and usually prevents recurrent fever. Acetarsone in tablets did not give good results in Tunisia. Durand reports better results with acetarsone in powder, 1 Gm. each morning for four days. Neosarsphenamine is not contraindicated in icteric forms of

recurrent fever. Globulins from convalescents' blood as recommended by Zermati can be preventive and curative, especially when one hesitates to employ neoarsphenamine. In hemorrhagic and neurologic cases transfusion of total or concentrated blood is employed. The author adds that a low mortality has been registered during this epidemic.

By a recent decree of the minister of public health, recurrent typhus has been added to the list of contagious diseases to be compulsorily reported.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Oct. 7, 1945.

Socialization of Medicine

President Getulio Vargas recently signed two decrees of the utmost importance to the practice of medicine and to the social organization of the country. The first decree establishes the minimum sum to be paid to doctors for professional services rendered by them as employees in private medical organizations. The professional services are distributed in many specialties, as for example clinicians, surgeons, radiologists, analysts or hygienists, and several subdivisions, as director, assistant or auxiliary. The same decree states the maximum duration of work, which varies from four to eight hours a day, with a weekly maximum of twenty-four hours and a scale which introduces a basis for variation important to cities and states. The decree specifies that, in cases of disagreement between a private patient and the physician about the sum to be collected for medical care, when the case goes to court and the sum claimed is not more than \$500 the amount demanded shall be considered a definite right of the physician, in accordance with the records on his books. To enjoy this right the physician is obliged to have routine record books with full informative entries in order to make possible the necessary investigations by the judge. This decree for the practice of medicine corresponds to the minimum wage and salary law in labor legislation. In many known cases the federal government and the state and municipal administrations pay their medical employees salaries that are substantially inferior to the minimum established by the new decree.

The second decree is more important than the first. There is no organization in Brazil similar to the American Medical Association, and up to now cases infringing medical ethics have been judged by the local medical societies which are not affiliated with any national or central professional organization. The new decree institutes councils of medicine "to maintain the exact observance of the principles of professional ethics in the practice of medicine." There will be a federal council in the capital of the country and a regional council in every state or federal territory. The regional councils shall be composed of five members elected for three years by the secret vote of the physicians regularly registered in the state or territory. The federal council shall be composed of seven members elected by secret vote for a five year tenure. The principal functions of the councils are (a) to maintain a register of the physicians legally entitled to practice medicine in the state or territory, (b) to judge the cases of infringement of the principles of medical ethics and impose the necessary penalties and (c) to exercise the right of arbitration in the cases in which physicians are involved professionally. The penalties the councils can impose are (a) confidential advertence, (b) confidential reprehension, (c) public reprehension published in the Bulletin of the Medical Syndicate, (d) suspension from medical practice for a period of thirty days and (e) exclusion of the physician from the medical profession, always by a vote of the federal council. From these penalties there can be appeal, without suspensive consequence, to the federal council, except in the case of exclusion of the physician from the medical profession.

This is the only instance in which the appeal shall have suspensive effect. The expenses of this quasijudicial administrative machinery are to be covered by a deduction of 20 per cent of the dues which every physician is obliged to pay as a member of local medical syndicates, which are organizations created by the Brazilian "New State" in the Ministry of Labor. Pending the election and the organization of the federal and the regional councils, the principles of professional ethics in the practice of medicine will be enforced by the regulations contained in the proposed code of medical ethics as it has been approved by the fourth Brazilian Medical Syndicalist Congress. The first federal council will be composed of seven members chosen by the minister of labor from a list of twenty-eight doctors prepared by the president of the Federation of the Medical Syndicates. The minister of labor is in charge of the administration of the decree.

These two decrees, but particularly the second, which created the medical councils, have aroused great opposition and protest from the medical associations and from the leading practitioners of medicine all over the country. Eighteen medical associations in the city of Rio de Janeiro and many from other parts of Brazil have sent telegrams to President Getulio Vargas indicating their disapproval of the decree. The National Academy of Medicine of Rio de Janeiro, the most important medical association of the country, and for many years a kind of "senate" of Brazilian medicine, recorded the publication of the decree and immediately suspended its weekly meeting as a protest. At the next meeting Dr. Pitanga Santos, a leading proctologist of Rio, addressed the academy on the subject, stating that the decree should be considered as having a typical nazi-fascist pattern. Dr. Santos criticized the section of the decree which entitles the minister of labor, who usually is not a physician, to choose the first members of the federal council. Dr. Santos pointed out that the medical profession in Brazil is for the most part composed of law abiding citizens. For the few who may need some disciplinary punishment the "New State" has a handful of special decrees. "What has the minister of labor to do with Brazilian physicians?" exclaimed Dr. Santos.

Among the many physicians of all the states of Brazil who have protested against the creation of these medical councils is Dr. Pedro da Cunha, a professor of medicine at the Fluminense School of Medicine of Niteroi and a popular practitioner in the city of Rio de Janeiro. Dr. Cunha's opinion about the decree has made a deep impression on the medical profession and on the general population as well.

Marriages

JAMES BOND DEALY JR., West Newton, Mass., to Miss Katharine Sumner Lasell in New York, September 15.

JOHN CAMPPBELL O'KEEFE, Albany, N. Y., to Miss Mona Ann Brown of Fieldston, N. Y., September 15.

JOHN WILLIAM FRISTOE JR., Albany, N. Y., to Miss Ruth Sneed Conner of Atlanta, September 21.

WILLIAM BURGETT SMITH, Grand Ridge, Ill., to Miss Jane Hunter in Kansas City, Mo., August 13.

SPENCER W. NORTHUP, Toledo, Ohio, to Miss Virginia Ferris Banting in Maumee, October 6.

JAMES F. PECK, Princeton, Ind., to Miss Mary Evelyn Edgington of Indianapolis, September 1.

JAMES T. NIX JR. to Miss Mary E. Barksdale, both of New Orleans, September 24.

RUDOLPH V. POWELL to Mrs. Vincentia Rehme, both of St. Louis, September 28.

CHARLES EMMETT ROGERS to Miss Frances Barry, both of Milwaukee, July 3.

Deaths

Ralph Charles Matson * Portland, Ore.; University of Oregon Medical School, Portland, 1902; born in Brookville, Pa., Jan. 21, 1880; associate clinical professor of medicine and surgery at his alma mater, where he had been a member of the executive faculty and co-director of the tuberculosis clinic; specialist certified by the American Board of Internal Medicine; member of the Pacific Coast Surgical Association, Portland Academy of Medicine, Pacific Interurban Clinical Club, American Association for Thoracic Surgery, American Trudeau Society, Oregon State Tuberculosis Society and the American Clinical and Climatological Association; member of the executive committee of the International Artificial Pneumothorax Association; honorary member of the Minneapolis Surgical Society, Kansas City Southwest Clinical Society, Eastern Oregon District Medical Society and the Hollywood Academy of Medicine, Los Angeles; past president of the American Sanatorium Association; member of the board of regents of the American College of Chest Physicians, which he served as president 1939-1940 and in 1941; director and formerly vice president of the National Tuberculosis Association; formerly vice president of the Pan Pacific Surgical Association; fellow of the American College of Physicians and the American College of Surgeons; fellow of the International College of Surgeons in Geneva in 1937; delegate to the International Union Against Tuberculosis in Washington, D. C., in 1908, Rome in 1912 and Lausanne, Switzerland, in 1923; vice chairman of the thoracic section of the seventh cruise congress of the Pan American Surgical Association in 1938; honorable first lieutenant with the Harvard University Surgical Unit, serving with the British Expeditionary Forces in 1916, a captain in the Royal Army Medical Corps in 1917 and a major in the medical corps, U. S. Army, serving as chief medical examiner and tuberculosis specialist at Camp Lewis from 1917 to 1919 and chief of the medical staff at General Hospital number 21, Denver, 1919-1920; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty; director, department of surgery, Portland Open Air Sanatorium, Milwaukie; chief surgeon, University State Tuberculosis Hospital; attending specialist, chest surgery, Chest Surgical Center, Veterans Administration Facility; chest consultant, Multnomah County Hospital; consulting thoracic surgeon, Doernbecher Memorial Hospital for Children; member, visiting staff, Good Samaritan Hospital; acting assistant surgeon, U. S. Public Health Service, Relief Station; member, specialists' panel, Union Oil Company; a member, associate medical advisory board, National Jewish Hospital, Denver; served as honorary member of the staff of the Lymanhurst School for Tuberculosis in Minneapolis; chairman of the editorial board of *Diseases of the Chest* and on the editorial board of the *Western Journal of Surgery, Obstetrics and Gynecology*; author of numerous articles in English, German and French on the diagnosis, management and medical and surgical treatment of pulmonary tuberculosis and contributor of sections or chapters to books; died October 26, aged 65.

William Walter Young * Atlanta, Ga.; Johns Hopkins University School of Medicine, Baltimore, 1913; professor of psychiatry and neurology at the Emory University School of Medicine; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the American Psychiatric Association and the Southern Medical Association, of which he had been chairman of the section on psychiatry and neurology in 1933; on the staffs of the Emory University, Grady and Piedmont hospitals and St. Joseph's Infirmary; served as consultant psychiatrist to the U. S. District Court; served during World War I; died September 7, aged 55, of myocardial infarction.

Henry Mann Silver * New York; Bellevue Hospital Medical College, New York, 1875; fellow of the American College of Surgeons and the New York Academy of Medicine; formerly professor of clinical surgery at the University and Bellevue Hospital Medical College and professor of surgery at the Woman's Medical College of the New York Infirmary for Women and Children; consulting surgeon, Gouverneur Hospital and New York Infirmary for Women and Children in New York and the St. Luke's Hospital in Newburgh; died September 27, aged 94, of senility.

Dominick Francis Aloisio, Herkimer, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1903; member of the American Medical Association; past president of the Herkimer County Medical Society; served as chief of staff of the Memorial Hospital; died at Newport in August, aged 45.

Joseph T. Axline * North Hollywood, Calif.; St. Louis University School of Medicine, 1906; served in the medical corps of the U. S. Army with the Thirty-Sixth division overseas during World War I, returning to this country with the rank of major; retired from the Reserve Corps in 1933 with the rank of lieutenant colonel; on the staffs of the Valley Hospital in Van Nuys and the St. Joseph's Hospital in Burbank; died on Balboa Island August 14, aged 63, of coronary occlusion.

Henry G. Berry, Mount Clemens, Mich.; Detroit College of Medicine, 1886; member of the American Medical Association; emeritus member of the Michigan State Medical Society; on the staffs of St. Joseph Sanitarium and Hospital in Mount Clemens and St. Mary's Hospital in Detroit; died in Camrose, Alta., August 19, aged 80, of diabetes mellitus and myocardial failure.

William Thomas Bradley, Blackton, Ark.; Chattanooga (Tenn.) Medical College, 1903; member of the American Medical Association; died recently, aged 70, of carcinoma of the prostate.

James Charles Brown, Littleport, Iowa; Chicago College of Medicine and Surgery, 1911; member of the American Medical Association; died July 9, aged 72, of carcinoma of the bowel.

George Vrooman Cochran * Oakland, Calif.; University of California Medical School, San Francisco, 1931; served as a captain in the medical corps, Army of the United States, from May 1942 to May 1944, when he retired because of total permanent disability; died July 2, aged 48, of malignant hypertension.

Edward Merriman Coleman, Clermont, Fla.; University of Louisville Department of Medicine, 1898; member of the American Medical Association; member of the county board of health; served during the Spanish-American War and World War I; died August 4, aged 72, of cerebral hemorrhage and nephritis.

Camille Ogden Driver, Los Angeles; Rush Medical College, Chicago, 1922; died in the Hospital of the Good Samaritan August 2, aged 48.

William Elliot Foster, Babylon, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1891; member of the American Medical Association; a director of the Babylon National Bank and Trust Company; died August 30, aged 78, of cardiovascular sclerosis.

Ermin Morton Gardiner, Bennington, Vt.; University of Vermont College of Medicine, Burlington, 1912; member of the American Medical Association; on the staff of the Putnam Memorial Hospital, where he died July 26, aged 56, of cerebral thrombosis.

Merritt Jemison Heath * Birmingham, Ala.; Birmingham Medical College, 1913; served during World War I; died August 31, aged 58, of coronary occlusion.

Stanton Hendrick, Oneonta, N. Y.; Albany Medical College, 1892; member of the American Medical Association; for many years on the staff of the Fox Memorial Hospital; died August 10, aged 80, of cardiac thrombosis.

George Platt Hurd, Chula Vista, Calif.; Dartmouth Medical School, Hanover, N. H., 1888; died in San Diego July 11, aged 82, of arteriosclerosis, heart disease and uremia.

Hamner Carson Irwin, Orange, Texas; University of Maryland School of Medicine, Baltimore, 1905; member of the American Medical Association; at one time a fellow at the Mayo Foundation in Rochester, Minn.; during World War I served as major in the medical corps, British Expeditionary Forces, and was relieved from service in the U. S. Army with the rank of lieutenant colonel; died in the Veterans Administration Facility, Legion, August 6, aged 67, of coronary arteriosclerosis, pulmonary atelectasis and emphysema.

William Earl Janes * Eureka, Kan.; University of Kansas School of Medicine, Kansas City, 1918; secretary of the Butler-Greenwood Counties Medical Society; served as vice president of the Kansas Medical Society; died in the Wesley Hospital, Wichita, July 5, aged 59, of carcinoma of the pancreas.

Arthur Jordan * Seattle; Columbian University Medical Department, Washington, D. C., 1893; veteran of the Spanish-American War and World War I; formerly associated with the U. S. Public Health Service; died July 6, aged 75, of coronary thrombosis.

Charles Aubrey Joy, Wayland, N. Y.; Albany Medical College, 1914; served during World War I; for many years on the staff as senior assistant physician of the Craig Colony in Sonyea; died July 2, aged 60, of coronary thrombosis.

Charles Joseph Kelley, Anselmo, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1889; Rush Medical College, Chicago, 1893; died July 3, aged 87, of nephritis.

Allen Edward Kidd, Portland, Ore.; Barnes Medical College, St. Louis, 1905; member of the American Medical Association; served on the faculty of his alma mater; on the staffs of the Hahnemann and Providence hospitals; died July 7, aged 69, of coronary thrombosis.

George Christopher Kieffer, Philadelphia; Jefferson Medical College of Philadelphia, 1900; served during World War I; chief of medical staff, St. Mary's Hospital, where he died August 18, aged 67, of generalized carcinoma.

Herman William Julius Koerper, Columbus, Ohio; Rush Medical College, Chicago, 1912; member of the American Medical Association and the Columbus Obstetrical and Gynecological Society; fellow of the American College of Surgeons; associate professor of obstetrics at the Ohio State University College of Medicine; consulting obstetrician at Mount Carmel and University hospitals; served during World War I; died July 26, aged 57.

Orren W. Loughlen @ Puyallup, Wash.; University of the City of New York Medical Department, New York, 1889; died July 15, aged 84, of arteriosclerotic heart disease.

Ralph Lippincott Lutz @ Roscoe, Pa.; University of Pittsburgh School of Medicine, 1930; interned at the Presbyterian and Elizabeth Steel Magee Hospitals in Pittsburgh; member of the local school board and of the board of directors of the First National Bank; on the staff of the Charlevoix-Monessen Hospital, Lock Number Four, where he died July 30, aged 39, of thrombosis of the mesenteric veins.

Eugene Pierre Mallett, Hendersonville, N. C.; Long Island College Hospital, Brooklyn, 1889; on the staff of the Patton Memorial Hospital; died August 25, aged 83, of lobar pneumonia and asthma.

Van Newhall Marsh @ Painesville, Ohio; University and Bellevue Hospital Medical College, New York, 1899; University of Wooster Medical Department, Cleveland, 1900; in 1938 member of the House of Delegates of the American Medical Association, past chairman of the city board of health; medical examiner for the draft board; died in Ukiah, Calif., July 25, aged 69, of cerebral thrombosis.



CAPT. DONALD WALKER CHEFF
M. C., A. U. S., 1913-1945



CAPT. EARL BOHNERT
M. C., A. U. S., 1914-1944



CAPT. RAYMOND WEBSTER HEGE
(MC), U.S.N., 1901-1945

Charles John Lavery, Aberdeen, S. D. (licensed in South Dakota in 1890); formerly mayor of Fort Pierre; died in St. Luke's Hospital July 20, aged 78, of adenocarcinoma of the prostate.

John McDannell @ Nashua, Iowa; Kentucky School of Medicine, Louisville, 1891; on the staff of the Cedar Valley Hospital, Charles City; died in Charles City July 14, aged 75, of uremia and coronary thrombosis.

KILLED IN ACTION

Donald Walker Cheff, Waynesboro, Pa.; University of Nebraska College of Medicine, Omaha, 1937; member of the American Medical Association and the Medical Society of Delaware; interned at the Delaware Hospital in Wilmington; served a residency at the Brandywine Sanatorium in Marshallton, Del.; on the staffs of the Delaware and Wilmington General hospitals, both in Wilmington, Del.; began active duty as a first lieutenant in the medical corps, Army of the United States, on June 20, 1942; promoted to captain on May 1, 1943; had initial training with the 95th Division but was transferred to the 77th Division before going overseas; served as commander of a medical battalion; served with the famous 77th (Statue of Liberty) Division, going to the Pacific with the division; took part in the invasion of Guam and of Leyte, where he was awarded the Bronze Star for heroism in action; awarded the Silver Star medal; killed in action in Ie Jima April 16, aged 32.

Earl Bohnert, St. Louis; Washington University School of Medicine, St. Louis, 1941; served an internship and residency at St. Louis City Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, on Aug. 25, 1943; promoted to captain; killed in action in the European area June 10, 1944, aged 29.

Raymond Webster Hege @ Captain, M. C., U. S. Navy, San Diego, Calif.; University of Cincinnati College of Medicine, 1927; specialist certified by the American Board of Otolaryngology; interned at the U. S. Naval Hospital, League Island, Philadelphia; began active duty as a lieutenant (jg) in the medical corps of the U. S. Naval Reserve, on July 6, 1926; promoted to lieutenant, lieutenant commander and captain; surgeon on Vice Admiral Marc A. Mitscher's carrier flagship, losing his life in the Pacific area when the vessel was hit by Jap suicide planes May 11, aged 43.

Emmett Wood Mead, Castlewood, Va.; Medical College of Virginia, Richmond, 1892; member of the American Medical Association; died July 27, aged 83, of senility.

Charles H. Montgomery * New York; McGill University Faculty of Medicine, Montreal, Que., Canada, 1903; served as chief of staff of the Manhattan Eye, Ear and Throat Hospital and on the staffs of the Bellevue, Harlem and Montefiore hospitals; died July 13, aged 64, of coronary occlusion.

Clifford J. Morris, Dawson Springs, Ky.; Vanderbilt University School of Medicine, Nashville, 1912; at one time assistant superintendent of Western State Hospital in Hopkinsville; chief physician at the state penitentiary at Eddyville; died July 25, aged 60, of heart disease.

Reid Rufus Morrison, Statesville, N. C.; North Carolina Medical College, 1906; served overseas during World War I; assistant physician in the county health department; died in the H. F. Long Hospital July 21, aged 62.

Wallace Welsh Munsie * Decatur, Ill.; Hahnemann Medical College and Hospital of Philadelphia, 1940; interned at the Huron Road Hospital in East Cleveland; on the staffs of the Decatur and Macon County Hospital and St. Mary's Hospital; died July 25, aged 32, of endocarditis.

Logan Skidmore Owen, Hoboken, N. J.; University of Georgia Medical Department, Augusta, 1924; member of the American Medical Association; interned at the Bellevue and

Frederick Eugene Porter * Medical Director, Captain, U. S. Navy, retired, Alhambra, Calif.; Vanderbilt University School of Medicine, Nashville, Tenn., 1901; entered the U. S. Navy on Oct. 10, 1904; retired Sept. 1, 1939 on or after attaining statutory retirement age; fellow of the American College of Surgeons; died Nov. 28, 1943, aged 68, of coronary embolism and chronic interstitial nephritis.

Samuel Jackson Price, Queenstown, Md.; University of Maryland School of Medicine, Baltimore, 1909; member of the American Medical Association; president of the Queen Annes County Medical Society; served during World War I; deputy medical examiner, Queen Annes County; on the associate staff of the Memorial Hospital in Easton, where he died July 25, aged 58, of chronic emphysema and endocarditis.

Carson R. Reed, Natchitoches, La.; Atlanta College of Physicians and Surgeons, 1906; member of the American Medical Association; died in a sanatorium in Shreveport August 4, aged 66.

Edward L. Rolph, Kimball, Neb.; University of Louisville (Ky.) Medical Department, 1892; died August 3, aged 85, of cardiac decompensation.

Henry Wilbur Sager, Marion, Ohio; National Normal University College of Medicine, Lebanon, 1892; on the staff of the Marion City Hospital; died August 27, aged 80, of cardiac decompensation.



CAPT. CHARLES FRANKLIN SAMPSEL
M. C., A. U. S., 1910-1945



LIEUT. COMDR. LOWELL G. KRAMAR
(MC), U.S.N.R., 1900-1945



LIEUT. GILBERT H. WOLF
M. C., A. U. S., 1900-1942

Knickerbocker hospitals in New York; on the staff of St. Mary's Hospital; affiliated with the Hoboken plant of the Bethlehem Steel Corporation; died in New York Hospital July 15, aged 47, of heart disease.

Robert Sommer, Richmond, Maine; Medizinische Fakultät der Universität Wien, Vienna, Austria, 1920; served as resident on the staff of the Mercy Hospital in Hamilton, Ohio; died July 30, aged 50, of coronary thrombosis.

KILLED IN ACTION

Charles Franklin Sampsel * Bristol, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1936; interned at the Philadelphia General Hospital in Philadelphia; began active duty as a first lieutenant in the medical corps, Army of the United States, on Aug. 11, 1942; later promoted to captain; killed in action in Okinawa April 6, aged 34.

Lowell Graft Kramar * Fortuna, Calif.; Stanford University School of Medicine, San Francisco, 1928; interned at the San Francisco Hospital; served as assistant resident at St. Luke's Hospital in San Francisco; past president of the Humboldt County Medical Society and the Humboldt County Tuberculosis Society; member of the

local chamber of commerce and the Rotary Club; began active duty as lieutenant commander in the medical corps of the U. S. Naval Reserve on Nov. 30, 1942; died in the Asiatic area June 21, aged 45, of extreme multiple injuries.

Gilbert Heinsfurter Wolf, New York; Baylor University College of Medicine, Dallas, 1935; member of the American Medical Association and the American Academy of Dermatology and Syphilology; served an internship at St. Mary's Hospital in East St. Louis, Ill., and the Grady Hospital in Atlanta; began active duty as a first lieutenant in the medical corps, Army of the United States, on May 5, 1942; died in enemy action Oct. 9, 1942, aged 42, while aboard ship en route to Iraq.

Correspondence

"EMERGENCIES IN THE ALLERGIST'S PRACTICE"

To the Editor:—Dr. Waldbott's article entitled "Emergencies in the Allergist's Practice" (THE JOURNAL, August 25) will impress practitioners with the value of a working knowledge of allergy. Many doctors perform skin tests without realizing the danger of serious and even fatal consequences of intracutaneous testing. Literal interpretations of skin test findings without clinical survey further deprive patients of foods or materials they should have. Much harm is done by prescribing diets based on allergy tests alone.

On page 1206, paragraph 5, Dr. Waldbott states that "scratch testing material loses its potency relatively soon," which would indicate that intracutaneous extracts are more stable, yet actually the reverse holds true. Glycerinated extracts and powders remain stable for a much longer period than the intracutaneous allergens and furthermore are much safer to use. In addition, the intracutaneous method produces many more false positives, as a result of which persons are separated, as already mentioned, from foods which they may strongly require and for which the all too frequently used vitamins are substituted, with unsatisfactory results.

I disagree on a point which appears firmly entrenched in the literature, namely that the size of the skin test reaction is the guide to the degree of sensitivity and from which schedules of treatments and classifications are made. I regularly see patients with 4 plus skin reaction who can take very high doses, and 1 plus responses in patients able to tolerate only a weak schedule and therefore do not regard the size of a skin test as the key to clinical sensitivity. Only after a few of the early injections, small well diluted doses, slowly raised, with accurate observations of local, focal or constitutional responses can the clinical sensitivity be determined. Severe, repeated constitutional reactions may occur when this method of determining sensitivity is not used. In 1936 I stressed the point "fit the dose to the patient, not the patient to a schedule," and the latter cannot be positively determined by the initial skin test (Engelsher, D. L.: Allergy in Practice, *Ohio State M. J.* 32:1229 [Dec.] 1936).

The lower part of the arm and the forearm are the safest sites for testing, certainly not the back. In case of immediate constitutional reaction, a tourniquet can be easily applied to prevent further absorption, whereas this is impossible on the back and very uncomfortable on the thigh.

When the emergency is that grave and intravenous epinephrine may be indicated, it is safer in my opinion to use a prepared 1:10,000 solution rather than, as Dr. Waldbott states, mixing a 1:1,000 solution with blood, in the syringe, while the needle is in the vein (page 1207, column 1). Neither can an accurate dilution be made, nor is the time propitious for expending even a few seconds in the procedure.

The method of pollen desensitization quoted of W. W. Duke (New Method of Administering Pollen Extract for Purposes of Preventing Reactions, *THE JOURNAL*, March 15, 1930, p. 767) of adding epinephrine to each injection plus the use of a blood pressure cuff acting as a tourniquet is not logical and is not used by any allergist, to my knowledge, because of the evanescent action of the epinephrine, which could not prevent the later reactions.

Switching from depleted or old extracts to fresh ones accounts for many severe reactions, in spite of following the numerous published (Coca, Walzer and Thommen: Asthma and Hay Fever in Theory and Practice, Springfield, Ill., Charles C Thomas, 1931, p. 348) methods of the proportionate mixing of each. I regard this as an erroneous method, because accuracy of the mixed strength of the solution is lacking. My routine is never to have an empty bottle. The upper and lower margins

of my labels on the bottles are the guides. When the fluid reaches the lower margin, fresh extract is added to no higher a level than the upper margin of the label. By this precaution an equalizing pool is maintained through the various extract strengths. Clear labeling and care in using the correct extract and strength are simple facts occasionally overlooked in haste, which will prevent serious reactions.

On page 1208, column 5, Dr. Waldbott aptly mentions deaths from intravenous aminophylline and quotes G. A. Merrill (Aminophylline Death, *THE JOURNAL*, Dec. 25, 1943, p. 1115). Intramuscular use of this drug will alleviate many an attack, without the dangers of the intravenous route, which latter is used much too frequently and unnecessarily.

From the number of serious consequences which we see, from the use of acetylsalicylic acid and morphine for persons sensitive to these drugs, I feel that many practitioners doubt that such allergies exist. To suspend the cough reflex with morphine not infrequently has a fatal outcome. Thorough questioning on drug sensitivity should form a part of all histories, medical, surgical or specialties, and a prominent designation (I encircle positives in red) used. The surgeon should not hesitate to have an allergic consultation, if the slightest doubt exists, for type of anesthesia, drug and diet recommendations. An aspirin tablet given postoperatively for a "cold" can flare-up an asthma in an aspirin-sensitive patient so severe that a fatality may result. Contrary to Dr. Waldbott's statement (page 1208, column 1, paragraph 4) epinephrine sensitivity does exist to a varying degree. A patient at Fordham Hospital would become transiently disorientated after 2 minims of 1:1,000 epinephrine solution was injected. Many patients develop tachycardia, trembling and paleness from small doses.

Dr. Waldbott omitted two important points in his instructive paper: severe sulfonamide reactions and proper precautions in administration of serum. Sensitivity to sulfonamides may produce extensive angioneurotic edema with occasional edema of the glottis. Deaths from serum injections are well known to the profession. The seven ways to prevent serum reactions were published in *THE JOURNAL* (Engelsher, D. L.: Serum Administration and Allergy, *THE JOURNAL*, May 20, 1944, p. 238) after my earlier suggestions in 1936 and 1942.

DAVID LOUIS ENGELSHER, M.D., New York.
Associate Attending Physician in Allergy, Morrisania and Union hospitals; Attending Allergist, Bronx Eye and Ear Infirmary; Chief of Allergy Clinic, Fordham Hospital.

[To Dr. Engelsher's communication Dr. Waldbott replies:]

To the Editor:—The comment by Dr. Engelsher reemphasizes a number of points brought out in my paper. Concerning those on which there is some divergence of opinion, I wish to suggest the following:

1. Glycerinated extracts, which are usually employed for intracutaneous testing, are definitely more stable than the powdered ones, which are most widely in use for scratch testing. False positive reactions occur in both methods of testing. They can easily be recognized after the extract in question has been used a few times.

2. If intracutaneous tests are used (not scratch tests!) the injection of graduated doses of a certain antigen, either directly or by passive transfer, has been by far the most satisfactory method to me of gaging the patient's sensitivity (Waldbott, G. L.: Hay Fever Treatment During the Season, *Tri-State M. J.* 15:2949 [May] 1943).

3. The intravenous method of administering aminophylline is decidedly more effective and prompt in its action than the intramuscular one and therefore far too valuable to be discarded. It is safe if the precautions which are outlined in my paper are followed.

4. Transient disorientation, tachycardia, trembling and pallor are not indications of sensitivity (meaning allergy!) to epinephrine. It cannot be questioned, however, that there is an individual degree of response to pharmacologic action of the drug.

5. Anaphylactic shock from serum as well as from drugs exhibits the same symptomatology and requires the same treatment and prophylaxis as that from pollen injections (Waldbott, G. L.: Prevention of Anaphylactic Shock, with a Study of 9 Fatal Cases, *THE JOURNAL*, Feb. 6, 1932, p. 446; Allergic Shock from Substances Other Than Pollen and Serum, *Ann. Int. Med.* 7:1308 [April] 1934). I therefore did not elaborate on it further.

GEORGE L. WALDBOTT, M.D., Detroit.

THE USE OF TOURNIQUETS

To the Editor:—The paper by Speigel and Lewin in *THE JOURNAL*, October 6, contributes valuable information on the neglected subject of tourniquets, which admittedly was not fully settled by my research because of obstacles encountered. The following remarks may assist toward clarifying some points:

1. The described nerve lesions were evidently not due to asphyxia within the time (one and one-half hours) mentioned by the authors but were evidently due to direct pressure. The location of neuromas and other details indicate that the tourniquet application was of the old-fashioned kind, namely a rather broad tube of poor elasticity wrapped two or more times around the limb in separate turns. This method combines the evils of narrow and of broad tourniquets. My use of a narrow, highly elastic tube in two superimposed turns is not customary and has never been proved to cause permanent paralysis or contracture.

2. The narrow tourniquet is apt to crush nerves against bone in exposed locations, in the arm and to a less extent in the lower part of the leg. Precautions may consist in choosing the safest place for a tourniquet and placing small pads to guard endangered nerves. Granting that a broad tourniquet is more sparing of nerves within certain time limits, animal experiments show that if the time is long enough for damage to be caused by the broad band it is more severe and lasting than with the narrow band. For a valid therapeutic reason, I once placed a narrow tourniquet for seven hours below the knee of a man in Dr. Crossman's service; the inevitable paralysis was almost gone within three months, but with a broad tourniquet it would probably have been permanent. Crushing by a narrow tourniquet is like surgical section of a nerve followed by immediate suture. By an interesting coincidence, in that same issue of *THE JOURNAL* (p. 484) there is a recommendation of crushing the phrenic nerve with a mosquito hemostat as a recognized means of establishing temporary paralysis. Extended crushing, as by a broad tourniquet, would cause necrosis and fibrosis over such a length as to block regeneration permanently.

3. Refrigeration is the most powerful means of preventing or reducing damage from any kind of pressure and also from asphyxia. Examples: no paralysis or thrombosis in the many amputations under refrigeration anesthesia; only temporary paralysis of animals' legs after fifty-four hours of refrigeration with a narrow tourniquet. There seems to be no excuse for operating on a limb with a tourniquet without refrigeration. Cases such as those cited by Speigel and Lewin enlarge the list of disabilities and deaths resulting from the lack of official adoption of this method, which I began to publish in 1937. Balanced against the advantages of the broad tourniquet or padding with a towel, and against the greater advantages of pneumatic pressure, is the pronounced insulation thus introduced. The protection of a wide zone of tissue from cold is a difficulty which has not been solved and which stands as the strongest argument against broad tourniquets.

FREDERICK M. ALLEN, M.D., New York.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

EXAMINING BOARDS IN SPECIALTIES

Examinations of the Examining Boards in Specialties were published in *THE JOURNAL*, Nov. 24, page 906.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Mar. 19-21. Sec. Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

COLORADO: * Denver, Jan. 1-5. Final date for filing application is Dec. 17. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

DELAWARE: Examination, Dover, Dec. 12. Endorsement, Dover, Dec. 19. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

IDaho: Boise, Jan. 15. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

KANSAS: Topeka, Dec. 6. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

KENTUCKY: Louisville, March 25-27. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Jan. 23-25. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: Medical, Baltimore, Dec. 11-15. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore. Homeopathic, Baltimore, Dec. 11-12. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Jan. 28-31. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA: * Raleigh, Dec. 29. Final date for filing application is Dec. 19. Sec., Dr. Ivan Procter, Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 1. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: Endorsement, Columbus, Jan. 8. Examination, Columbus, March 19-22. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, March 23. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: * Jan. 23-26. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Harrisburg, January. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

RHODE ISLAND: * Providence, Jan. 3-4. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: * Pierre, Jan. 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TEXAS: Austin, March 27-29. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, March or April 1946. Sec., Dr. F. J. Lawliss, Richford.

WASHINGTON: * Seattle, Jan. 14-16. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Charleston, Jan. 7-9. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

WISCONSIN: * Madison, Jan. 8-10. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

WYOMING: Cheyenne, Feb. 4. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

IOWA: Des Moines, Jan. 8. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MICHIGAN: Ann Arbor and Detroit, Jan. 11-12. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, Jan. 2-3. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, Jan. 8-9. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

OKLAHOMA: Oklahoma City, Jan. 21. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: Portland, March 2. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

SOUTH DAKOTA: December. Sec., Dr. J. D. Alway, Aberdeen.

TENNESSEE: Memphis and Nashville, Dec. 17-18. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Milwaukee, Dec. 1. Sec., Prof. Robert N. Bauer, 152 W. Wisconsin Ave., Milwaukee.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind. 12:255-280 (Aug.) 1945

- Oral Therapy for Pruritus Ani. L. G. Bodkin.—p. 255
Neurofibroma: Gastroscopic Report. W. D. Paul and D. W. Shapman.—p. 258.
Diarrhea Problem. W. Z. Fradkin.—p. 261.
General Treatment of Diarrheal Diseases. W. Z. Fradkin.—p. 263.
Sulfanilamide-Experimental Production of Liver Damage: Its Effect on Gastric Acidity. M. H. Streicher.—p. 267.
Allergy as Factor in Surface Ulcers, Varicose Veins, Phlebitis and Thrombosis. J. A. Turnbull.—p. 272.

American Journal of Diseases of Children, Chicago 70:61-134 (Aug.) 1945

- Arterial Embolism and Thrombosis in Infancy. R. E. Gross.—p. 61.
*Pathogenesis of Nephrotic Hyperlipemia. W. Heymann and E. C. Clark.—p. 74.
Diagnostic Classification of Patients with Mental Deficiency: Distribution of 1,330 Institutionalized Patients, with Review of Incidence of Convulsive Disorders and Noncerebral Developmental Anomalies. H. Yarnet.—p. 83.
*Studies on Control of Acute Infections of Respiratory Tract: IV. Continuous Oral Administration of Sulfadiazine to Children Highly Susceptible to Infection. M. Siegel.—p. 89.
Studies on Streptococci ("Enterococci") of Lancefield Group D: I. Serologic and Biochemical Characteristics. G. E. Foley and S. M. Wheeler.—p. 93.
Celiac Syndrome: III. Dietary Therapy for Congenital Pancreatic Deficiency. Dorothy H. Andersen.—p. 100.

Nephrotic Hyperlipemia.—Heymann and Clark determine total lipid, total and free cholesterol and phospholipid concentrations in the blood serum of dogs, rabbits and rats which were subjected to bilateral and unilateral nephrectomy or to enteral and parenteral administration of mercury bichloride, uranium nitrate and potassium dichromate. For control purposes the effects of splenectomy, cholecystectomy, sham operations and many other procedures were investigated. The authors conclude that the kidneys of dogs, cats, rats and monkeys are part of a mechanism which influences blood lipid concentration. The hypothesis is advanced that the hyperlipemia found in cases of nephrosis is of renal origin.

Sulfadiazine in Infections of Respiratory Tract.—Siegel studied the clinical effects of continuous oral administration of sulfadiazine on the incidence and severity of acute infections of the respiratory tract in children. The drug was used between August 1942 and April 1944 for periods of four to fifteen consecutive weeks in doses ranging from 0.5 to 2 Gm. daily. The average level of free sulfadiazine in the blood was 3.5 mg. per hundred cubic centimeters with a maintenance dose of 1 Gm. a day, and 7.2 mg. per hundred cubic centimeters with 2 Gm. a day. It was not necessary to discontinue the drug in any case because of serious toxic reactions. The incidence of acute infections of the respiratory tract was almost the same for treated and for control children. The treated patients recovered somewhat more promptly than the controls and experienced fewer complicated illnesses and fluctuations in severity. While the prophylactic use of sulfonamide compounds is of recognized value in certain circumstances, their usefulness is limited by factors pertaining to the host and the infecting agent which are not predictable. If the sulfonamides are used when prevailing conditions are not suitable for successful chemoprophylaxis, there is little additional advantage over prompt therapeutic application.

American Journal of Ophthalmology, Cincinnati

28:943-1070 (Sept.) 1945

- Concerning Similarity of Developing Retina and Brain Wall in Human Embryos. H. C. Haden.—p. 943.
Ocular Complications of Certain Tropical Diseases. M. J. Reeh.—p. 958.
Juvenile Disciform Degeneration of Macula: Report of 10 Cases; Pathologic Findings. H. Lucic.—p. 965.
Total Reconstruction of Upper Lid (Blepharopoiesis) W. L. Hughes.—p. 980.
Catmin Lenses. S. Kamellin.—p. 993.
Summary of Reexamination of Orthoptic Patients with Consideration of Permanence of Results. Jean S. Robinson.—p. 999.
*Penicillin Treatment of Trachoma: Preliminary Report. D. J. Darius.—p. 1007.

Penicillin in Trachoma.—Darius reports 12 cases of trachoma ranging from type I to the chronic type III treated at the United States Indian Service Hospitals with sodium salt of penicillin in a solution of 500 units to each cubic centimeter of water. Drops of this solution were instilled in the eye every three hours. Improvement was observed under the three hour schedule but more rapid results were obtained under a half hour schedule. Loss of photophobia and lacrimation was noticed in twenty-four to forty-eight hours. Improvement in vision was usually evident on the third day, as was paling and thinning of the hyperemic palpebral conjunctiva, with gradual flattening of follicles and granulation tissue. Beginning shrinking and retraction of vessels of the pannus was definite on the fifth to the seventh day, with accompanying slower clearing of the gray corneal pannus infiltrate. Rapid healing of complicating corneal erosions and ulcers was the most spectacular improvement. The effect is not superior or more rapid than that obtained with sulfanilamide therapy, but penicillin may offer a solution in the treatment of sulfanilamide resistant or sensitive cases.

American Journal of Physiology, Baltimore

144:175-330 (July) 1945. Partial Index

- Progressive Paralysis in Dogs Cured with Synthetic Biotin. S. G. Smith, with technical assistance of T. E. Lasater.—p. 175.
Stimulating Effect of Acetylcholine on Mammalian Heart and Liberation of an Epinephrine-like Substance by Isolated Heart. F. Hoffmann, Elena J. Hoffman, S. Middleton and J. Talesnik.—p. 189.
Effect of Hemorrhage and Replacement on Apparent Volume of Plasma and Cells. H. Lawson and W. S. Rehm.—p. 199.
Efficacy of Gelatin Solutions and Other Cell Free Fluids in Reversing Effects of Nearly Complete Exsanguination. H. Lawson and W. S. Rehm.—p. 217.
Effect of Exercise on Erythrocyte Sedimentation Rate. W. A. Black and P. V. Karpovich.—p. 224.
Effect of Bed Rest on Blood Volume of Normal Young Men. H. L. Taylor, L. Erickson, A. Henschel and A. Keys.—p. 227.
Ability of Liver to Change Blood Glucose and Lactate Concentrations Following Severe Hemorrhage. Clarissa H. Beatty.—p. 233.
Nature of Renal Tubular Mechanism for Acidifying Urine. R. F. Pitts and R. S. Alexander, with technical assistance of Katharine Fagan.—p. 239.
Survival Times of Eviscerated Rats as Influenced by Continuous Intravenous Administration of Solution of Sodium Chloride. D. J. Ingle, Ruth Sheppard and Helen A. Winter.—p. 255.
Influence of Excitation of Muscle Pain Receptors on Reflexes of Decerebrate Cat. E. Gellhorn and M. B. Thompson.—p. 259.
Metabolic Factors in Oxygen Poisoning. I. Gersh and C. E. Wagner.—p. 270.
Effect of Electrical Stimulation on Neuromuscular Regeneration. H. M. Hines, Eleanor Melville and W. H. Wehrmacher.—p. 278.
Life Cycle of White Blood Cells: Rate of Disappearance of Leukocytes from Peripheral Blood of Leukopenic Cats. J. S. Lawrence, D. M. Ervin and R. M. Wetrich.—p. 284.

American Journal of Public Health, New York

35:891-986 (Sept.) 1945. Partial Index

- Evaluation of Methods to Control Air Borne Infections. J. E. Perkins.—p. 891.
1,200 Local Public Health Departments for the United States. H. Eversen and Martha Luginbuhl.—p. 898.
Scarlet Fever in Schoolrooms: Outbreaks Due to Serologically Typed Hemolytic Streptococci. A. D. Rubenstein and G. E. Foley.—p. 905.
Infant Mortality in Relation to Month of Birth. P. R. Eastman.—p. 913.
Nutrition and Oral Tissues. M. Massler.—p. 923.
Memphis and Shelby County Tuberculosis Control Program. L. M. Graves and F. H. Cole.—p. 934.
Physical Growth in Childhood and Military Fitness. A. Ciocco.—p. 927.
Biochemical Methods in Nutritional Surveys. O. A. Bessey and O. H. Lowry.—p. 941.

Am. J. Roentgenology & Rad. Therapy, Springfield, Ill.

54:109-216 (Aug.) 1945

- Production of Growth by Action of Pituitary Gland on Vascular and Hemopoietic Systems: Interrelationship Between Lungs and Pituitary Gland. R. C. Moehlig.—p. 109.
- Analysis of Physical Factors Controlling Diagnostic Quality of Roentgen Images: Part I. Introduction. R. H. Morgan.—p. 128.
- *Ebstein Type of Tricuspid Insufficiency: Roentgen Studies in Case with Sudden Death at Age of 27. D. deF. Bauer.—p. 136.
- Roentgenologic Manifestations of Amebiasis of Large Intestine. A. Druckmann and S. Schorr.—p. 145.
- *Significance of Cannon's Point in Normal and Abnormal Functions of Colon. J. Arendt.—p. 149.
- Skeletal Metastases in Cancer of Breast: Study of Character, Incidence and Response. J. Bouchard.—p. 156.
- Treatment of Hemangiomas with Roentgen Rays. J. V. Prouty.—p. 172.
- Tumors in One of Homologous Twins: Hodgkin's Disease with Primary Skeletal Manifestations. H. Charache.—p. 179.

Tricuspid Insufficiency.—Congenital tricuspid insufficiency of the Ebstein type has been reported only 16 times. Bauer reports the seventeenth case, the fourth instance of sudden death. A woman aged 27, studied on three occasions over a period of nine years, was first seen at the age of 18, when she complained of weakness, easy fatigability and breathlessness in response to minor exertion. The most distressing symptom was "heart flutter." She was seen several times in the outpatient clinic before having an attack of acute gonococcal arthritis involving the right wrist, which occurred at the age of 20. Bouts of palpitation and dyspnea on exertion were then less troublesome because she had learned to accept her physical limitation and was leading a less active life. Teleroentgenograms and roentgenoscopy showed increase of the transverse diameter of the heart during this two year period. At the age of 27 the patient was admitted for study of her cardiac status and consideration of the advisability of oophorectomy. The electrocardiogram showed the same general picture as previously, with normal sinus rhythm and right bundle branch block. The roentgenogram demonstrated enlargement of the right atrium and ventricle. A papillary cystadenoma of the ovary was removed. The postoperative course was satisfactory and the patient was discharged on the twelfth day. She returned for dressings on the twenty-first and twenty-eighth postoperative days. She died suddenly during the last visit to the clinic. The attending physicians believed that death was caused by pulmonary embolism. Postmortem x-ray studies of the heart were compared with teleroentgenograms made during life. The roentgenologic evidences of tricuspid insufficiency were massive enlargement of the cardiac shadow to the right and left in the absence of pulmonary congestion, prominent upper mediastinal shadow with widened superior vena cava, enlargement of the right atrium and ventricle and difficulty in visualization of the small left ventricle.

Cannon's Point in Functions of Colon.—Arendt states that after a barium meal it may be noted that the first part of the transverse and the ascending colon up to a certain point is contracted, while the second part of the transverse colon and the descending colon are of normal diameter. In another group of cases the reverse process may be evident: the ascending colon and the first part of the transverse colon are wide, the second part of the transverse colon and the descending colon are contracted. The earliest observations concerning this phenomenon were made by Cannon, who in experiments on animals described in 1902 a ring of contraction in the large bowel of the cat, which divides the colon into two portions. This point, which is in the proximal mid-third of the transverse colon, is also found in man. It is of clinical and roentgenologic significance and should be called Cannon's point. Arendt's roentgenologic observations indicate that it is the pivoting point of the vagus-pelvicus and of the sympathetic innervation, thus dividing the colon into two distinct neurologic units as far as the extrinsic innervation is concerned. The innervation follows the blood supply. To be visible in roentgenograms, an antagonism between both neurologic units is necessary; if the nerve impulses in the two divisions are the same, no demarcation can be expected; if they are antagonistic, the division is clearly visible. Instead of the antagonism, we sometimes see in the case of overlapping impulses a contraction ring caused by intrinsic nerve impulses. The two units may be harmonious or antagonistic. Spastic contraction of the second unit is a frequent

cause of constipation in the ascending colon and is best treated by antispasmodics. The proper knowledge of the neurologic units is important in differentiation and choice of the operative method of the different types of megacolon.

Annals of Allergy, Minneapolis

3:241-332 (July-Aug.) 1945

- Effect of Glutamic Acid on Hydrogen Ion Concentration of (pu) of Urine in Petit Mal Types of Epilepsy: Daily Record for One Year of Urinary pu of Epileptic Patient with Allergic Background, to Whom Four Forms of Glutamic Acid Were Administered in Various Daily Amounts. R. H. Spangler.—p. 241.
- Study of Bronchial Asthma in General Hospital, with Statistical Report of 200 Cases. J. A. Rudolph.—p. 258.
- Carcinoma of Lung with Asthmatic Symptoms. M. W. Moore.—p. 271.
- Allergy to Tobacco Smoke. D. M. Pipes.—p. 277.
- Fall Graduate Instructional Course in Allergy. T. Hall.—p. 282.
- Atmospheric Pollen Surveys in Brazil. J. B. Greco.—p. 283.
- Experimental Approach to Oral Treatment of Food Allergy: III. Oral Desensitization with Food Proteptans of Orally Allergized Animals. E. Urbach, G. Jagard and D. W. Crisman.—p. 287.
- Sensitivity to Oral Administration of Castor Oil. P. Blank.—p. 292.

Archives of Internal Medicine, Chicago

76:63-130 (Aug.) 1945

- *Powdered Stomach in Treatment of Fatty Liver and Other Manifestations of Infantile Pellagra: Its Significance with Reference to Problems of Edema and Steatorrhea in Infants and in Adults. T. Gillman and J. Gillman.—p. 63.
- Cold Hemagglutination in Primary Atypical Pneumonia and Other Common Infections. C. L. Spingarn and J. P. Jones.—p. 75.
- Ambly Pericarditis. F. Kern Jr.—p. 88.
- Ulcerative Tracheobronchitis Following Atypical Pneumonia: Report of Cases. E. B. Kay.—p. 93.
- *Epidemic Hepatitis With and Without Jaundice: Some Clinical Studies on 255 Patients Among Troops in Combat Zone. R. M. Finks and R. W. Blumberg.—p. 102.
- Infectious Diseases: Eleventh Annual Review of Significant Publications. H. A. Reimann.—p. 114.

Powdered Stomach in Treatment of Infantile Pellagra.

—The syndrome which the Gillmans accept provisionally as pellagra in infants is prevalent in Johannesburg, South Africa. Analysis of hospital records during the last four years has revealed that the death rate among children suffering from this disease fluctuates between 40 and 60 per cent. The views held concerning the causes of pellagra suggest that this disease is caused by a lack of vitamin B complex, especially of nicotinic acid. However, vitamins fail to be effective in approximately 50 per cent of the cases. The authors discovered that powdered hog stomach led to rapid improvement in the clinical condition and simultaneously depleted the fat from the liver. In a study of 23 cases of pellagra in infants and children they noted that the main clinical findings were a varying degree of edema, dermatitis, angular and labial stomatitis (cheilosis), graying of the hair with varying degrees of alopecia, steatorrhea and a large fatty liver. Microscopic examination of aspiration biopsy of the liver revealed the presence of fat in the liver cells. The fatty change in the liver was a constant feature and was not due to intercurrent infection. The accumulation of fat in the liver proved to be a more accurate measure for predicting the outcome than the clinical findings. All the patients in this series treated with vitamins died. Liver extract and especially powdered stomach depleted the fat from the liver, and this depletion was invariably associated with a dramatic improvement. Five days' treatment with 10 Gm. of powdered stomach a day was adequate to allow for a continued depletion of fat from the liver even after treatment was suspended. Although infantile pellagra is initiated by dietary imbalance, the secondary pathologic changes which supervene cannot be alleviated by a full diet and vitamin concentrates. The edema of infantile pellagra is not related to the serum proteins but probably results from a disturbance of the gastrohepatoportal mechanism. In view of the low fat content of the diet, the steatorrhea in infantile pellagra was regarded as resulting not from malabsorption of fat but from conversion of carbohydrate to fat which cannot be utilized. The evidence indicates that fat continuously present in the bowel liberates enterogastrone, which in turn inhibits gastric function. In view of the rapid improvement in pellagra treated with powdered stomach, it is recommended that this treatment be given universal trial for other diseases in which steatorrhea is a prominent feature.

Hepatitis With and Without Jaundice.—During the late summer and fall of 1943 an epidemic of infectious hepatitis began among American, British and French troops in the North African theater. A total of 448 patients with jaundice were admitted to the gastroenterologic service of a general hospital in Italy. Jaundice developed also in patients in the surgical wards: 196 patients with hepatitis and jaundice uncomplicated by other diseases, 42 patients having additional diseases simultaneously and 17 patients with hepatitis without jaundice were studied. Finks and Blumberg stress that the clinical characteristics of epidemic hepatitis with jaundice are not essentially different from those of catarrhal jaundice. Epidemic hepatitis is similar to postvaccinal hepatitis but differs in the frequent occurrence of chills, fever and lymphadenopathy and in the relative absence of dermatitis, anemia and mental reactions. Fever, chills and other evidence of an acute infectious, systemic disease are common initial symptoms. The disease is usually mild but has a tendency to relapse with exertion, fatigue and intercurrent infections. Relapses can be prevented or minimized by rest in bed and by a prolonged convalescent period. The disease, although usually benign, may be rapidly fatal. There was one fatality in this group. Repeated severe hemorrhages from ulcerations in the gastrointestinal tract and nephrosis due to deposition of bile pigment in the renal tubules were complications in the fatal case.

Canadian Medical Association Journal, Montreal

53:199-308 (Sept.) 1945

- Principles of Penicillin Therapy. R. F. Farquharson —p. 199.
Insulin and Diabetes: In Retrospect and in Prospect C. H. Best —p. 204.
*Genitofemoral Causalgia. E. K. Lyon —p. 213.
Small Hospital Construction F. H. Coppock —p. 216.
Medical Treatment of Postoperative Pulmonary Atelectasis M. Aronovitch —p. 222.
Family with Inherited Ectodermal Dysplasia W. D. Wilkey and G. H. Stevenson —p. 226.
Psychotherapy for General Practitioner. S. R. Lavoie —p. 230.
*Treatment of Essential Hypertension with Sodium Thiocyanate R. E. Beamish and J. D. Adamson —p. 236.
Comments on Abdominal Wounds Treated in Canadian Field Surgical Unit G. C. Johnston —p. 242.
Syndrome of Ovarian Tumor Associated with Ascites and Pleural Effusion S. R. Townsend —p. 245.
Psychologic Factors in Skin Disease. F. Kalz —p. 247.
Surgical Treatment of Prostatic Obstruction R. M. Nesbit —p. 254.
Osteogenic Sarcoma Developing on Paget's Disease R. C. Burr. —p. 262.
Classification of Nontuberculous Chest Diseases, with Special Reference to So Called Atypical Pneumonia C. Rich —p. 265.

Genitofemoral Causalgia.—Lyon adds 3 cases of genitofemoral causalgia to a series of 7 which were reported by McGee in 1942. Lyon's first patient was a farmer aged 18 who complained of severe pain in the right groin of four months' duration. The pain was aggravated by standing, walking, lifting and straining and disappeared when the patient lay down and flexed his right thigh on the abdomen. He had had an appendectomy four years previously. The old appendectomy scar was well healed, not tender or fixed. There was tenderness along the right inguinal canal, especially in the region of the internal ring. The tenderness in this region was so acute that the patient became faint when this area was palpated and stated that this was the exact spot where he felt the maximum amount of pain when walking and standing. A diagnosis of genitofemoral causalgia was made and operation advised. The cecum and terminal ileum were found to be bound down by dense adhesions to the posterior peritoneum over the iliac vessels. These adhesions were freed and the posterior peritoneum was opened. The genitofemoral nerve was identified and lifted up from the psoas muscle where it crossed beneath the ureter. It was followed down. The nerves seemed to be under an unusual tension. Approximately 2 inches of the main nerve trunk was excised and the cut ends were allowed to retract. The convalescence was uneventful and the patient has been free from pain and discomfort since the operation. In the two other cases the author was again impressed with the apparent tautness of the nerve at the region of its exit from the posterior peritoneum and its entrance to the internal inguinal ring and below Poupart's ligament. In none of the 3 patients were the adhesions particularly dense, but the nerves in all 3 were quite taut

even with the patient lying in the supine position. This tension might be increased by hyperextension of the thigh during the act of walking or standing. Sectioning of this nerve is the best method of producing a cure of this most distressing condition.

Treatment of Essential Hypertension with Sodium Thiocyanate.—Beamish and Adamson used Barker's sodium thiocyanate method in the treatment of 10 patients with essential hypertension. Special precautions were taken to eliminate the psychic effects of treatment. Objective and subjective improvement definitely attributable to the action of thiocyanate was obtained in over half of the patients. Blood pressure reductions obtained in all cases averaged 40.5 mm. systolic and 19.8 diastolic. Symptomatic improvement occurred in 6 cases; mild toxic effects occurred in 5. Best results were secured in those with severe symptoms associated with little cardiovascular and renal damage. By proper selection of cases the number of good results could be increased. Dosage must be carefully controlled by blood cyanate determinations, and patients must be watched for toxic manifestations. Severe symptoms or dangerously high pressure, unrelieved by other treatment, indicate the use of thiocyanate.

Delaware State Medical Journal, Wilmington

17:149-168 (Aug) 1945

- Rural Health and Its Future E. Cameron —p. 149.
School Hygiene in the School; One Method of Presentation B. Zuger —p. 150.
V-J Day and Some Local Sanitation Along Delaware River R. C. Beckett —p. 152.
Incidence of Plural Births. C. A. Marshall —p. 155.
Areas for Rapid Progress in Nutrition. Mary T. Davenport —p. 156.
Why the Board of Health Is Concerned About Total Person. E. Usher —p. 157.
Community Education for Health Katharine B. Franklin —p. 159.
Teaching Function of Public Health Nurse Mary M. Klaes —p. 162.

Journal of Aviation Medicine, St. Paul

16:209-284 (Aug.) 1945

- Studies on Bends H. L. Motley, H. I. Chinn and F. A. Odell —p. 210.
Traumatic Calcifications: Precipitating Factors in "Bends" Pain J. H. Allan —p. 235.
Relationship Between Physical Fitness and Success in Training of U. S. Naval Flight Students A. Graviel and H. West —p. 242.
Effect of Methylene Blue on Performance Efficiency at High Altitudes Matilda Moldenhauer Brooks —p. 250.
Physical Fitness G. R. Harris —p. 263.
Combined Mixing and Flow Regulator M. Eckman and A. I. Brach —p. 265.
Inhibition of Animal Metabolism Under Decompression S. F. Cook —p. 268.
Tintulence at Altitude in Presence of Cardiorespiratory Report of Case C. B. Taylor and F. J. Robinson —p. 272.
Arterial Spasm and Transient Paralysis Resulting from Lightning Striking an Airplane J. H. Currens —p. 275.
Doctor of Air. F. A. Walbank —p. 278.

Journal of Immunology, Baltimore

51:65-126 (Aug.) 1945

- Relation of Antibody Response in Swine to Dose of Swine Influenza Virus Inactivated with Formalin and with Ultraviolet Light. I. W. McLean Jr., Dorothy Beard, A. R. Taylor, D. G. Sharp and J. W. Beard —p. 65.
Studies of Subgroups of Blood Groups A and AB: I Active and Passive Acquisition of Alpha Agglutinins by A₂ Patients as Result of Blood Transfusion. L. E. Young —p. 101.
*Id.: II Agglutigen A₂: Its Detection with Potent B Serum and Investigation of Its Inheritance. L. E. Young and E. Witelsky, with technical assistance of J. Mohr —p. 111.
Studies on Purification of Syphilis Antigen E. Fischer, R. Fischer, Dallmann and R. Bone —p. 117.

Detection of Agglutigen A₂.—Young and Witelsky say that although the subgroups A₂ and A-B are rare they may be encountered from time to time in the operation of a blood transfusion service and in the investigation of paternity. They discovered a man with the blood group A₂B in the course of determining the blood groups of medical students. Of all red cells available, A₂B cells give the weakest reactions with B serum and therefore provide the most sensitive testing mediums for this serum. Serum from group B donors vaccinated intravenously with a solution of A and B factors may produce strong agglutination of A₂B cells. Titrations of such a serum serve to emphasize the great advantage of using "immunized"

Medical Annals of District of Columbia, Washington

14:393-442 (Sept.) 1945

- Story of Penicillin. A. Fleming.—p. 393.
Note on Infection and Cancer. L. P. Shippen.—p. 400.
Symptomatology of Infectious Mononucleosis. J. M. Moser Jr.—p. 403.
Outpatient Penicillin Therapy of Gonorrhea. B. D. Chinn and F. G. Gillick.—p. 407.

Outpatient Penicillin Therapy of Gonorrhea.—The treatment schedule used by Chinn and Gillick consisted of four injections of penicillin of 50,000 units each at hourly intervals. They treated a total of 776 cases of gonorrhea without any toxic reactions. Two cultures forty-eight hours and ten days after treatment were obtained in 589 cases. Patients failing to return for observation were not considered in the evaluation of the method. Cultures were negative in 91.2 per cent of the patients receiving one course of treatment. Among the 52 patients who were considered treatment failures 19 were treated with a second course of 200,000 units. Seventeen of these responded successfully. Blood levels of from 0.19 to 0.25 unit per cubic centimeter of serum were maintained for at least three hours after treatment in 4 cases. The authors conclude that this method is satisfactory as an outpatient procedure in the treatment of gonorrhea.

Minnesota Medicine, St. Paul

28:609-688 (Aug.) 1945

- Presidential Message to House of Delegates of Minnesota State Medical Association. E. L. Tuohy.—p. 629.
Colonna Reconstruction Operation for Ununited Fractures of Neck of Femur. M. S. Henderson and J. J. Hinchey.—p. 641.
Retropharyngeal Abscess and Massive Hemorrhage. J. J. Hochfilzer.—p. 644.
Punch Biopsy of Liver. R. F. Schmidt and A. H. Wells.—p. 647.

28:715-784 (Sept.) 1945

- Conflicts and Psychogenic Maladjustments Incidental to Age. M. W. Kemp.—p. 715.
Psychosomatic Medicine, with Special Reference to Neurodermatoses. M. A. Troxell.—p. 718.
Surgical Repair of Inguinal Hernias. E. W. Minty and F. W. Minty.—p. 723.
Asthma and Formation of Hernia. L. E. Prickman and E. D. Bayard.—p. 727.
Chronic Peptic Ulcer of Esophagus. W. A. Coventry and A. H. Wells.—p. 729.

New England Journal of Medicine, Boston

233:315-338 (Sept. 13) 1945

- *Effect of Chemotherapy on Duration of Carrier State Following Scarlet Fever. A. D. Rubenstein and G. E. Foley.—p. 315.
Hodgkin's Disease: Report of Case of Mediastinal Type with Leukopenia and Terminal Atelectasis. S. Levy.—p. 322.
Physiology. H. E. Hoff.—p. 325.
Acute Biliary Pulmonary Tuberculosis, Adenocarcinoma of Head of Pancreas; Tumor Thrombi in Lungs and Liver.—p. 328.
Acute Bacterial Endocarditis, with Mycotic Aneurysm of Aortic Valve and Rupture of Commissure Between Right and Left Posterior Cusps.—p. 332.

Chemotherapy for Scarlet Fever Carriers.—Rubenstein and Foley studied the effect of chemotherapy on temporary and convalescent scarlet fever carriers. In two epidemics the utilization of small daily doses of a sulfonamide preparation—sulfamerazine in the first instance and sulfadiazine (Pickrell's solution) in the other—apparently reduced to a minimum the number of persons carrying the causative organism. Studies among the families of children who acquired scarlet fever in a schoolroom outbreak revealed a spread of the causative organism to a large proportion of the family contacts, with the occurrence of several secondary cases. A study of a group of untreated scarlet fever patients showed that when discharged from isolation hospitals the majority carried the same type of streptococcus that was present on admission. A large proportion of scarlet fever patients treated with certain of the sulfonamides developed a temporary period of "cultural latency." In approximately half of these cases, however, the original streptococcus reappeared in the cultures after an interval of one to five weeks. A study of sulfathiazole treated cases suggests that the period of "cultural latency" has no effect on the incidence of late secondary cases.

Psychosomatic Medicine, Baltimore

7:257-320 (Sept.) 1945

- Psychologic Factors in Combat Fatigue, with Special Reference to Hostility and Nightmares. L. J. Saul.—p. 257.
Hypnotic Ablation Technic for Study of Personality Development: Preliminary Report. H. Spiegel, J. Shor and S. Fishman.—p. 273.
Psychosomatic Regression in Therapeutic Epilepsy. T. D. Power.—p. 279.
Neuropsychiatric Aspects of Porphyria. N. Roth.—p. 291.
Study of Homosexual Adult Males. E. L. Sevringhaus and J. Chornyak.—p. 302.

Public Health Reports, Washington, D. C.

60:1005-1036 (Aug. 31) 1945

- DDT Water Emulsion in Rice Fields as Method of Controlling Larvae of *Anopheles Quadrimaculatus* and Other Mosquitoes. F. L. Knowles and F. W. Fisk.—p. 1005.

60:1037-1068 (Sept. 7) 1945

- Studies of Acute Diarrheal Diseases: X. C. Further Cultural Observations on Relative Efficacy of Sulfonamides in Shigella Infections. A. V. Hardy.—p. 1037.
Sickness Absenteeism Among Male and Female Industrial Workers During 1944, and Among Males During First Quarter of 1945, with Note on Absence Duration, 1941-1944. W. M. Gafafer.—p. 1043.
Isolation of *Pasteurella Tularensis* from Sputum: Report of Successful Isolations from 3 Cases Without Respiratory Symptoms. C. L. Larson.—p. 1049.

Tennessee State Medical Assn. Journal, Nashville

38:239-278 (Aug.) 1945

- Benign Obstructive Lesions in Right Lower Quadrant. J. R. Branch.—p. 239.
Fractures About the Elbow in Children. H. B. Boyd and A. R. Altenberg.—p. 243.
Gonorrhea: Its Diagnosis and Treatment. L. C. Sanders and S. F. Strain.—p. 252.
Toxemia of Pregnancy. L. E. Dyer.—p. 259.
Birth of a Twenty Pound Infant. J. J. Gwin.—p. 266.

38:279-314 (Sept.) 1945

- Hodgkin's Disease: Special Reference to Survival. C. C. Smeltzer.—p. 281.
Rational Management of Benign Prostatic Obstruction. R. F. Mayer and T. D. Moore.—p. 287.
Diagnosis and Treatment of Rectosigmoid Malignancy. M. W. Holehan.—p. 295.

West Virginia Medical Journal, Charleston

41:229-248 (Sept.) 1945

- *Silicosis—Its Prevention and Treatment. D. A. MacGregor.—p. 229.
Flocculation Test for Syphilis: Its Technic and Evaluation. W. L. Hardesty and Anita Hullman.—p. 237.
Acute Laryngotracheobronchitis in Children. Henrietta L. Marquis.—p. 240.

Silicosis.—The addition of as little as 1 per cent of aluminum dust to silica laden air is sufficient to prevent the development of silicosis in the experimental animal. It was not necessary to inhale both the silica and the aluminum simultaneously in order to protect the animal against experimental silicosis. When studying the application of this preventive measure to man it seemed necessary to have the miners breathe the aluminum dust in a relatively heavy concentration which could be measured and which would be approximately the same from day to day. The best time to give the treatment was when each shift of miners came into the change room to get ready for work. The miners are enthusiastic in their approval of this method of safeguarding their health. In using aluminum dust for treatment, the patients inhale aluminum laden air through a tube. The time of treatment is gradually increased from three minutes to twelve minutes, and treatments are given three times a week for a period of twenty weeks or more. The treatment of silicosis by the inhalation of fine aluminum dust results in a decrease of cough, shortness of breath, tightness in the chest and fatigue. In a group of 104 patients who had positive x-ray evidence of silicosis but who denied any disability there were 93 who claimed to be distinctly improved after treatment. MacGregor concludes that silicosis probably can be eradicated as an occupational hazard by means of adequate dust control and the use of aluminum dust as a preventive measure.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal of Pathology and Bacteriology, Edinburgh

57:157-284 (April) 1945

- Isoimmunization to Blood Group Factors A, B, and Rh. K. E. Boorman, B. E. Dodd and P. L. Mollison.—p. 157.
Bone Formation in Apical Scars. J. Davson.—p. 171.
Antigenic Structure of Erysipelothrix. A. W. Gledhill.—p. 179.
Effect of Humidity on Survival of Dried Cultures of Streptococcus Agalactiae. P. S. Watts.—p. 191.
Alloxan Diabetes in Rabbit. E. Duffy.—p. 199.
Fatal Bronchial Asthma Showing Asthmatic Reaction in Ovarian Teratoma. J. G. Thomson.—p. 213.
Thrombosis of Aorta in Newborn: 3 Cases, 1 with Infarction of Liver. J. E. Morison.—p. 221.
Structure of Heart Valves, with Special Reference to Their Blood Supply and Genesis of Endocarditis. W. F. Harper.—p. 229.
Isolation of Antigenically Homogeneous Strains of Bact. Coli Neapolitanum from Summer Diarrhea of Infants. J. Bray.—p. 239.
Comparison of Modifications of Three Serologic Reactions for Syphilis: Wassermann, Meinicke and Sachs-Georgi Tests. D. B. Colquhoun, W. B. Kyles I. Rannic.—p. 249.

Alloxan Diabetes.—Duffy points out that a large intravenous dose of alloxan (200 mg. per kilogram of body weight) causes rapid death in rabbits, there being a phase of hypoglycemia followed by hyperglycemia and inanition if the animal survives for several days. At postmortem the chief change is damage to the cells of the islets of Langerhans. Survival beyond this acute toxic phase may be secured by appropriate treatment with dextrose by mouth during the first forty-eight hours, followed sometimes by insulin during the first two weeks. Animals which survive the acute toxic phase develop a condition similar to human diabetes, with hyperglycemia, glycosuria, polyuria, polyphagia and cataract. There is diminished tolerance of dextrose, but tolerance is increased by administration of insulin. Ketouria, except at the early phase, is not a feature on ordinary diet but may be induced by administration of excess dextrose. In a proportion of cases spontaneous recovery occurs after several weeks or months, but animals have remained diabetic for as long as six to nine months. The only constant lesion in the diabetic rabbits is diminution in size of the pancreatic islets and reduction in number of beta cells, which also show enlargement, degranulation and sometimes vacuolation and hydropic change. The alpha cells are practically unaffected.

Asthmatic Reaction in Ovarian Teratoma.—Thomson reports the history of a woman, aged 47, who died in an attack of bronchial asthma. There were found in the teratomatous respiratory tissue of an ovarian teratoma "asthmatic" changes similar to those present in the bronchi.

Presse Medicale, Paris

53:241-252 (May 12) 1945

- *Treatment of Large Isolated Cystoceles. J. Patel and C. Dubost.—p. 241.
Treatment of Malignant Forms of Bouillaud's Disease. R. Lutembacher.—p. 241.
Arrest of Attacks of Paroxysmal Tachycardia by Intravenous Injection of Acetylcholine. M. Segers, J. Lequime and H. Denolin.—p. 242.

Treatment of Large Cystoceles.—Patel and Dubost describe an abdominal cystohysteropexy which they performed in 7 cases. They say that this intervention represents a solution for the surgical treatment of large cystoceles. In this method the trigonal vaginal portion of the bladder is attached to the anterior surface of the uterus, and then the uterus is attached to the abdominal wall; thus uterus and bladder are raised at the same time. In 4 of the cases the uterine fixation was made according to the method of Doléris. In the other cases, which concerned women of advanced age, direct fixation of the uterine fundus was done. Posterior colpoperineorrhaphy was done in only 3 cases, but the authors think that it should always be performed. As regards danger to the ureter, it is easily avoided by either inserting ureteral catheters or by taking care that the inferior point of vesicouterine attachment does not take the whole width of the bladder.

Sang, Paris

16:213-292 (No. 4) 1944. Partial Index

- Mechanism of Anemia in the Course of Splenic Anemia in Adults. Hemolytic Splenomegaly and Myelopenic Splenomegaly. P. Abrami, F. de Gaudart d'Allaines and J. Dugas.—p. 213.
Vitamin K and Globular Agglutination. W. de Weerd.—p. 218.
Comparative Study of Gower's and Dognon's Methods for Determining the Amount of Hemoglobin. P. Chevallier, A. Fiehrer and F. Salzon.—p. 223.
Untoward Reactions of Blood Caused by Sulfonamides. Henriette Noufflard.—p. 229.
Dognon's Method for Determining Amount of Hemoglobin in Blood. M. Guillot and H. Renault.—p. 243.
*Acute Eosinophilic Leukemia. Contribution to Study of Massive Eosinophilias of Blood. P. Ravault, M. Girard and L. Revol.—p. 258.
Hematologic and Clinical Considerations on the "Erythroblastic Disease in Adults." R. Crosnier and F. Morel.—p. 285.

Acute Eosinophilic Leukemia.—Ravault and his associates present a brief summary of 8 previously recorded cases of acute eosinophilic leukemia, adding the report of an additional case of a man aged 60. Acute eosinophilic leukemia is a rare disease occurring more frequently in men than in women. The clinical picture appears to be that of acute leukosis rather than of chronic leukemia. There may be rise of temperature, buccopharyngeal phenomena, osteoarticular pains, hemorrhages, and definite but moderate hypertrophy of the hemopoietic organs. Death may occur within several weeks or months. Examination of the blood may reveal a more or less considerable leukocytosis in which the eosinophils are the predominant cells; many of the cells may be immature.

Archivos Argentinos de Pediatría, Buenos Aires

14:331-378 (May) 1945. Partial Index

- *BCG Antituberculosis Vaccination. A. Chattas and A. Degoy.—p. 356.
Friedreich's Disease in Four Brothers: Etiology, Symptomatology, Prognosis and Therapy. A. Gareiso and B. Vijnovsky.—p. 363.

Antituberculosis Vaccination.—Chattas and Degoy report the results of BCG vaccination given intradermally to 250 infants during the first week of life. The dose of the vaccine was 0.15 mg. for 115 infants and 0.30 mg. for 102 infants. BCG was given by mouth to 68 nonallergic infants and children between the ages of 5 months and 14 years. The infants and children in this group gave negative results to the tuberculin tests with 0.10 mg. of tuberculin. The substance was given in a dose of 0.20 Gm. in 10 cc. of the vehicle. The authors found (1) that BCG is harmless in the doses given, (2) that allergy appears sooner in infants and children who receive large doses of BCG than in those who are given the classic doses of the substance and (3) the percentage of infants and children who become allergic is higher for the former and lower for the latter.

Semana Medica, Buenos Aires

52:41-77 (July 12) 1945. Partial Index

- *Spontaneous Cutaneous Emphysema in Course of Attacks of Asthma. E. G. Fongí and P. C. Rospide.—p. 46.

Spontaneous Subcutaneous Emphysema.—According to Fongí and Rospide, spontaneous subcutaneous emphysema in the course of attacks of asthma is rare. The authors report 2 cases at 22 and 26 years of age, respectively. Nausea, pain on deglutition, moderate cyanosis and subcutaneous emphysema of the supraclavicular zones and the neck appeared in the course of an attack. Crepitanes were heard on auscultation of the precordial region. Roentgenograms of the chest and of the neck in 1 case showed air in the form of a clear band about the left ventricle and in the form of two bands on both sides of the trachea. On the basis of the reports in the literature and of their x-ray findings, the authors believe that spontaneous subcutaneous emphysema in the course of an asthmatic attack is due to rupture of pulmonary vesicles in the pulmonary interstitial tissue, with consequent increased pressure and escape of the air into the mediastinum and the cellular subcutaneous tissues of the neck. The prognosis is favorable. The therapy consists of analeptics, oxygen inhalation or subcutaneous continuous injection of oxygen. Incision of the emphysematous blebs is only rarely necessary.

Book Notices

Alcohol, Science and Society: Twenty-Nine Lectures with Discussions as Given at the Yale Summer School of Alcohol Studies. Cloth. Price, \$5. Pp. 473. New Haven, Conn.: Quarterly Journal of Studies on Alcohol, 1945.

Here are included twenty-nine lectures with the discussion given at the Yale Summer School of Alcohol Studies during 1944. The subjects include considerations of metabolism and physiology of alcohol, the relation of alcohol to nutrition, the psychologic and psychiatric aspects of excessive drinking and inebriety, the relation of alcohol to pauperism and traffic, the medical treatment of the inebriate and similar topics. Altogether, the book provides about as complete a consideration of the subject as is anywhere available. The concluding chapter is a consideration of Alcoholics Anonymous, the most recent group movement for self control by inebriates.

Bone-Grafting in the Treatment of Fractures. By J. R. Armstrong, M.D., M.Ch., F.R.C.S., A/W/Comm. R. A. F. M. S. and Surgeon-in-Charge of an R. A. F. Orthopaedic and Fracture Centre. Foreword by R. Watson-Jones, B.Sc., M.Ch.Orth., F.R.C.S. Fabrikoid. Price, \$7. Pp. 175, with 204 illustrations. Baltimore: William Wood & Company, 1945.

This is a carefully prepared report on the experiences of the author in the management of 76 cases of bone grafting in the treatment of fractures. The general principles relating to the use of bone grafts are excellently set forth but there is perhaps too great an elaboration of operative details. More emphasis might have been given to a statistical analysis of the results in support of the author's conclusions. Fractures of the carpal navicular bone are particularly well dealt with, and the technic of closed pegging for graft fixation in case of delayed or nonunion is an ingenious procedure. Technical points that are open to argument are the necessity for both nail and intramedullary graft fixation for ununited fractures of the neck of the femur with survival of the head, extensive periosteal stripping for complete freshening up of the ends of an ununited fracture, the necessity for always fixing bone grafts with screws, and the author's tolerance for boiled grafts. The sections on preoperative and postoperative care are based on sound clinical thinking that characterizes the general sections. Emphasis on protection of the graft site, promotion of active rather than passive exercise and the avoidance of manipulation are welcome.

Common Ailments of Man. Edited by Morris Fishbein, M.D., Editor, *Hygeia, the Health Magazine*. Cloth. Price, \$1. Pp. 177, with 6 illustrations. Garden City, N. Y. Garden City Publishing Co., Inc., 1945.

The education of the public in health matters has one primary motivation—the need for preventing self medication and the substitution therefor of accurate diagnosis and scientific therapy. There are, however, certain facts about diseases of which all persons should be aware to enable them to seek the proper medical care at the right time. People are too prone to ignore everyday afflictions—common ailments such as colds, headache and backache. Yet all of these conditions may be warnings of impending danger, of the presence of some serious disorder which, when diagnosed early, is amenable to treatment. In this book a number of these common disorders are discussed in a clear, simple and scientific manner. Each ailment is considered by a recognized specialist in his field; hence the information is authentic. The physician can recommend this book to his patients without hesitation as a source of the type of information on disease with which the public should be acquainted.

Forget Your Age! By Peter J. Steincrohn, M.D. Cloth. Price, \$2.50. Pp. 238. Garden City: Doubleday, Doran and Company, Inc., 1945.

The advances made by modern medicine have lengthened life and diminished illness. Dr. Steincrohn has written previously essays and books enlightening the public on the progress of medicine, including "You Don't Have to Exercise," "Heart Disease Is Curable" and "More Years for the Asking." The present book is inspirational and should do much good in overcoming hypochondriasis in men and women who despair because the years creep upon them.

Men Under Stress. By Roy R. Grinker, Lt. Col., M. C., and John P. Spiegel, Major, M. C., Army Air Forces, United States. Cloth. Price, \$5. Pp. 485. Philadelphia: Blakiston Company, 1945.

In 1943 the authors gave a report on the treatment of combat induced illnesses in the North African campaign. The work had been carried out at a hospital behind the lines on patients from ground and air forces and from British and American fighting units. The present book is based on studies of American Air Force patients at a unique hospital for their treatment in St. Petersburg, Fla. In essential conclusions there are no important differences between the two studies.

In several ways this book is an important contribution to the literature of the war. To flight surgeons and to psychiatrists of the Air Forces it will be an emotional stimulus, an intellectual guide and in some degree a handbook. To those who are responsible for military organization it is a challenge because its pages carry implications for every aspect of military psychiatry and military organization: e. g. for the processes of selection and classification, the correlation of psychology and psychiatry and the conservation of military manpower by reducing the incidence of emotional breakdowns both in training camp and in combat. In this connection light is shed on the problem of group loyalty as a source of strength and on how it can increase vulnerability. There are indications of the methods by which men can be motivated for combat. And finally there are important implications concerning the role which psychiatry must play in relation to command in determining personnel policies in future military organizations.

None of these implications are developed in detail and the reader is usually left to draw his own conclusions on these broad aspects of military policy. Because the authors were still in military service while the book was being written, no other procedure was possible for them. It is to be hoped, however, that now that they are civilians they will feel free to develop unsparringly and in detail every criticism of traditional military caste, organization and procedure which is implicit in their work. Such lessons must be drawn now; otherwise as war recedes into the past we shall forget these problems, and army organization will lapse into its traditional errors.

Yet the main focus of the book is not on such organizational problems as these but rather on the technics of therapy and on a theoretical formulation of vulnerability, of the process of falling ill and of the process of recovery. The material of the book is divided into five major sections: (1) the kind of men who go into military aviation, (2) psychologic stresses of combat, (3) the reactions to combat, (4) the delayed reactions after combat and (5) civilian applications of military psychiatry.

The reviewer finds himself always interested and challenged but not always convinced. The grounds of disagreement are technical, however, and need not be elaborated here, because they in no way impair the general usefulness of the book to the audience for which it was written. One would only warn the young flight surgeon or psychiatrist not to be too concerned if certain basic concepts are unclear and are sometimes used in contradictory senses. One suspects that the authors themselves are never quite satisfied with their own formulations because they make many attempts to restate in varying ways their theory of the dynamics of illness and cure. In view of the complexity of the theoretical aspects of the problem, one should feel only respect for this perplexity.

The procedure of narcosynthesis under pentothal is clearly described, but the theoretical rationale of the technic is not free from the confusions and contradictions mentioned. Nor can the reviewer agree with the authors that narcosynthesis differs fundamentally from the technics of "narcoanalysis" and "hypnoanalysis" as these were practiced by certain earlier investigators. There are important differences in emphasis but there are also many important similarities. Narcosynthesis is rather a more nearly mature evolution out of these earlier and sometimes naive beginnings. Although it is still in the experimental stage itself, one may safely predict that narcosynthesis will exercise a profound influence on the evolution of psychotherapeutic technics in the coming decade and that the work of these authors will always stand as a milestone in the evolution both of military psychiatry and of psychotherapy in general.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

VITAMINS AND NEOSTIGMINE FOR DEAFNESS

To the Editor:—Are any particular vitamins or combinations of vitamins recommended in the treatment of chronic catarrhal otitis media with deafness? Has neostigmine methylsulfate been proved of any value?

William P. Barron, M.D., New York.

ANSWER.—The query cannot be answered without a definite understanding as to what is meant by the phrase catarrhal otitis media with deafness. There are many able clinicians who are not inclined to make this diagnosis often, for in their experience the more severe types of chronic deafness turn out to be lesions of the inner ear or otosclerosis. Certainly no diagnosis of the nature of hearing loss should be made without one or more careful tests of hearing capacity. The diagnosis of chronic catarrhal otitis media should not be made in the presence of a normal or nearly normal membrana tympani; nor should, if this condition is diagnosed, a pronounced loss in the higher tone range be assigned to pathologic changes in the middle ear. There are many cases of "played out" middle ear disease of childhood with changes in the membrana tympani in which later deafness of the inner ear type develops. Lastly there is reason to believe that for a short time, at least following inflation of the middle ear, there should be some demonstrable hearing improvement in instances of true chronic otitis media of catarrhal nature. This could not be true in otosclerosis, and it is this condition which would offer a great deal of difficulty in a differential diagnosis. A diagnosis once assured, however, there is still a good deal of difference of opinion as to the value of either vitamins or neostigmine methylsulfate in the treatment of deafness due to catarrhal states.

There has been no particular evidence that the mild avitaminosis so widely postulated nowadays is the cause of severe ear difficulties, nor should the observations in human beings be equated with the results seen in animal experimentation, in which the avitaminosis produced is severe. It is nevertheless not wrong to prescribe vitamins in the treatment of a patient with chronic catarrhal otitis media associated with difficulty in hearing, if the physician has an open mind, makes no excessive promises and most of all is exceedingly precise in his examination of the middle ear and in testing and retesting the hearing. His diagnosis with regard to the location of the seat of the pathologic condition in the hearing apparatus will be accurate and he will in addition rule out causes in the middle ear for deafness which are at least partially self curative (i. e. secretory catarrhal states).

There is less to be said in favor of neostigmine methylsulfate as a therapeutic aid in deafness than there is for the vitamins. Its use is highly empirical and should be viewed with skepticism.

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- Childrey, J. H.: Vitamin B and Other Measures in the Treatment of Deafness, *Laryngoscope* 50: 648 (July) 1940.
Covell, W. P.: Vitamins and the Ear, *Laryngoscope* 51: 683 (July) 1941.
Selfridge, Grant: Present Status of Vitamins in Relation to Eighth Nerve and Conduction Deafness, *Arch. Otolaryng.* 34: 125 (July) 1941.
Babbitt, J. A.: The Problem of Impaired Hearing, Transactions of the College of Physicians of Philadelphia, Section on Otolaryngology, and Philadelphia Laryngological Society, *Arch. Otolaryng.* 35: 94 (July) 1943; a discussion of the value of neostigmine in the treatment of impaired hearing.

HEMORRHAGIC PURPURA

To the Editor:—Would you please inform me whether there is any recent advancement in the treatment of purpura hemorrhagica in children?

V. W. Pryor, M.D., Holdenville, Okla.

ANSWER.—There is no recent advance in the general treatment of purpura hemorrhagica (primary thrombopenic purpura) that has given uniformly good results. For the control of local bleeding externally, thromboplastic substances have proved quite effective. As spontaneous recovery frequently occurs in children with hemorrhagic purpura, splenectomy should be reserved for chronic cases of over six to twelve months' duration.

EFFECTIVENESS OF PENICILLIN OF DIFFERENT MANUFACTURE

To the Editor:—A current comment in *The Journal*, July 7, 1945, states that the activity of penicillin varies with the method of manufacture. Could it be that the F substance is more active against hemolytic staphylococci? In March 1944, under the direction of the National Research Council, it was my privilege to treat a case of subacute bacterial endocarditis from which hemolytic staphylococci had been cultured. The treatment seems to have been a success. Just a year later I used about the same dosage of penicillin on a pelvic infection which produced abscesses despite the penicillin treatment; from these only hemolytic staphylococci could be cultured. Despite penicillin, suitable drainages, transfusions and so forth this patient finally died. The first patient was treated with penicillin from Commercial Solvents Corporation supplied through the National Research Council. The second patient was treated with various brands, mainly Upjohn's. Is there a difference?

L. A. Wheelwright, M.D., Grangeville, Ida.

ANSWER.—There is no evidence that the clinical results obtained from the use of penicillin vary with the method of its manufacture. The results and outcome of infection following penicillin treatment vary more often with the site of the infection, the sensitivity of the infecting strain of organism, the stage of the disease at which treatment is started and many other factors which are difficult to define. It is known that some strains of staphylococci have been encountered in which 20 to 25 units of penicillin per cubic centimeter has had no effect on their growth. These cases have frequently been fatal.

The chances are that the preparations used both in March 1944 and in March 1945 contained mostly penicillin G, and that neither preparation contained very much penicillin F. This is so because both manufacturers mentioned produce penicillin by the submerged culture method, which yields mostly penicillin G or penicillin II.

RECTAL TUBERCULOSIS

To the Editor:—A patient with rectal tuberculosis secondary to a healed pulmonary tuberculosis has been treated by surgery two or three times, but occasional abscess formation occurs. Ulceration is chronically present and cotton must be worn for a seropurulent discharge and occasional uncontrolled defecation. Pain is quite frequent. Is quartz light therapy by means of a local quartz electrode of any value? Is penicillin by any method of administration of value? What treatment apart from local treatment by a competent proctologist is advised? Could a general statement as to prognosis be given?

M.D. New York.

ANSWER.—The questions cannot be answered satisfactorily without more information regarding the character of the condition. For example, if the involvement is hyperplastic and limited to the rectum, if the lumen is reduced to such a degree that it cannot be enlarged and if the pulmonary condition will permit, it might be advisable to resect the rectum and establish a permanent colostomy. If ulcerative disease is predominant and there is no great thickening of the bowel wall or stricture formation, local therapy should be employed. Abscesses should be drained and sinuses should be uncovered. Hot irrigations of plain water or salt solution (130 F.) several times daily are helpful, especially for the relief of pain. Quartz light has no specific value but probably should be given a sufficient trial in conjunction with other therapeutic measures in case it may help in the particular case. Penicillin should be tried for the same purpose. The prognosis as to relief of the condition of the rectum and restoration of anything resembling normal function is not good. A continuance of some local disability is to be expected. The prognosis as to life depends chiefly on the pulmonary condition.

REMOVAL OF MOLES

To the Editor:—I have been told that magnesium carbonate will cause moles to drop off. If this drug is not effective please give me the name of any other drug used systemically to cause small moles around the neck to drop off.

M.D., South Carolina.

ANSWER.—Information is not available concerning any drug which, taken internally, will destroy ordinary cutaneous nevi which, taken internally, will destroy ordinary cutaneous nevi. All effective methods are applied locally; these include surgery. physical agents such as the cautery, electrocoagulation, electrolysis, solidified carbon dioxide, x-rays and radium, and chemical agents, as trichloroacetic acid. The common nevi about the neck that occur so often in middle aged women, known commonly as tags, are most easily removed with the cautery or by electrocoagulation. A few nevi may be stirred to malignant activity by tampering with them. If one chooses to remove them, it must be done in a careful, thorough manner. If there is any doubt about the safety with which any particular nevus can be destroyed, it should be seen by an expert or left alone.

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WHAT IS ADEQUATE MEDICAL CARE?

PRESIDENT'S ADDRESS

ROGER I. LEE, M.D.
BOSTON

Somewhat over ten years ago, in 1933, Lewis Webster Jones, now president of Bennington College, and I, with the help of Barbara Jones, made an attempt to define adequate medical care in the United States for the Committee on the Costs of Medical Care. This was a pioneering effort. It was done because it seemed to us that a beginning had to be made, and it was our pious hope that from this feeble attempt might come improved and more helpful studies on adequate medical care. To our disappointment, our work has mostly accumulated dust on bookshelves.

However, there have been many clarion shouts that medical care in the United States is inadequate, here, there and elsewhere, in this disease or that condition, but as far as I know no one has attempted to redefine adequate medical care or has suggested another yardstick to measure medical care. To be sure, in very limited fields a medical writer claims occasionally that this or that procedure, usually highly technical and often surgical, is inadequate, while his own is adequate. However, in the main, when reference is made to medical care in a broad sense statements usually run as follows: "Such and such a community has inadequate medical care because there is less than 1 doctor per 1,500 inhabitants." Again in 1936 untrained investigators asked people in a house to house survey if they had medical care. If the people said "No," they were recorded as not having adequate medical care. Or if they didn't like their medical care or they thought it was inadequate, then they too were recorded as having inadequate medical care. The resulting records were broadcast all over the land and were described as indicative of a melancholy and parlous state of inadequacy of medical care and of callous neglect by the medical profession.

STATISTICS FROM THE DRAFT

More recently there have been some highly colored statements regarding the large percentage of rejections for physical defects in connection with the operation of the Selective Service act. The figures are sobering and call for careful examination and considered action. But many of these defects have no relation to medical care, adequate or inadequate. Nature does not uniformly produce perfect fruit, be it babies, puppies, calves or apples. If children are very nearsighted or astigmatic, adequate medical care demands glasses for

the correction; but the Army or the Navy decides whether or not it wants such an individual. And little can be done about color blindness.

Some of these defects have a larger personal factor in their evaluation, both on the side of the examining doctor and on the side of the examined youth. If a lad is determined enough a little allergy or a little eye abnormality is often surmounted, as many fathers know.

The statistics from the draft in regard to mental and nervous conditions is of course disturbing. That is an unexplored area which is not really relevant to the discussion of adequate medical care. But I shall have something more to say on this vast and perplexing problem later on in the discussion. Certainly illiteracy is outrageous, but it is certainly not related to the problem of medical care.

SHIFTING CONCEPTS OF ADEQUATE CARE

Having participated in writing a book on adequate medical care, I am not oblivious to the difficulties involved, which include the extraordinary and continuing advances in medical science. When the book was written, serum therapy for pneumonia was the best we could offer. It was good; but it is always complicated to give intravenous therapy, except perhaps in a hospital. It is much simpler to give tablets of the sulfonamides and it is more effective. Then there was a tendency to change from sulfonamide tablets to intramuscular penicillin and now we have oral penicillin. And after penicillin what? In any event the general use of serum therapy seems almost ghostlike today. Likewise the present day treatment of venereal diseases is a changing No Man's Land.

Obstetric care has probably changed more than any other standard procedure. This progress in obstetrics has got the medical profession into a lot of trouble. The necessary anesthesia, the prompt surgical repairs, the nursing are most conveniently done in a hospital. Thus modern obstetrics ranks (roughly speaking) with catastrophic illness or operations as a major inroad on the family budget. In a generation obstetrics has entirely changed its status not merely as a medical procedure and problem but as an economic problem. Personally I happen to think that the concomitants of modern obstetrics are a part of adequate medical care. The definition changes.

Personally, again, I believe in the doctrine of the self limitation of certain diseases, including the common cold. But there are those who believe in the energetic local treatment of a cold. The difference in medical visits and dollars between the two schools of thought is very great.

Of course, we all know that luxury medicine is a factor and curiously enough is a factor when the fee-for-visit system does not prevail. It was particularly

President's address before the House of Delegates of the American Medical Association, Chicago, December 3, 1945

interesting in the days of acute doctor shortage, nurse shortage, laboratory shortage and hospital bed shortage what deletions could be made in a program of adequate medical care without real hardship. Doubtless some of our great hospitals and great medical schools have been grievous offenders in carrying out unnecessary procedures, thus encouraging the graduates in bad habits and offering a bad example to patients by furnishing superfluous medical attention. Probably the substantial majority of patients like more attention than is adequate, like to be fussed over and, surprisingly enough, are often willing to pay for it. Hence the charlatan, the quack and the cultist. Hence self medication, food fads and did I say vitamins or didn't I? Sometimes when I am feeling courageous I'm going to take a sleeping car poll. How many of the passengers do you think take a little something to help them sleep? It isn't liquid or alcoholic as in the old days, but one of the barbiturates.

No, I don't think it is luxury medicine, if the former prime minister of Great Britain is accompanied by his personal physician on his travels. I think what most of us have in mind is best illustrated by the extraordinary medical care furnished our fighting men in the battle areas in the war. The organization of that medical service was at the same time one of the wonders of the modern world and a comfort to all who had sons, husbands, brothers in this dreadful conflict. Warfare furnishes special conditions and demands special technics that are not readily transferred to the conditions of peace.

And yet already steps have been taken to make available some of these wartime technics to civil life. The returning medical officer of the Army and the Navy will think in different terms than he did as a civilian doctor. He will be used to having blood plasma always and often whole blood as therapeutic agents. Plans are already under way so that the Red Cross, which has supplied so remarkably blood plasma and whole blood to the armed forces, will continue under necessarily changed conditions, now that the war is over, to assist in furnishing blood and blood products for civilian needs.

An incident that happened during the Allied push across the Rhine is worthy of record. It was a busy day at a given blood center. Donors were lined up waiting their turn to give their blood. A man and his wife entered the scene in great distress and perplexity. Their child was sick at a nearby hospital and needed immediately several transfusions, but the hospital had no blood. Here in the blood donor center was blood, plenty of it, and their child needed the blood even as a wounded soldier needed it. Even though the blood from the donor center had to go to the armed forces, nevertheless the situation, which had arisen before, was met satisfactorily. That situation will arise many times in the future and we trust that an adequate organization will not necessitate the repetition of this drama.

I have dwelt on this particular feature because I believe that it is illustrative of trends that will alter our appraisal of adequate medical care. Plasma and whole blood not so long ago were generally given only in well equipped hospitals. Yesterday they were given on the battlefield, on the beaches, in the jungles by Hospital Corpsmen. Obviously if the materials are available, as we firmly believe they will be, they will be administered by the general practitioners at home or at the site of the accident as well as in the hospitals large and small.

DRIFT BETWEEN SPECIALISTS AND GENERAL PRACTITIONERS

In the discussion of adequate medical care, the problem of specialist service both in therapeutics and in diagnosis is always large and important. And herein are also trends and changes. It seems likely that the venereal diseases will be largely returned to the general practitioner. Certainly he is competent to treat gonorrhea with the sulfonamides. Certainly he is entirely competent to arrange for the administration of penicillin, and especially if the oral administration of penicillin materializes as a satisfactory procedure, as we now believe. Of course the last word has not been said and changes are occurring every moment, but I think that the general practitioner was a little overwhelmed and dizzy when it came to the treatment of syphilis by intravenous administration of the arsenicals. That day belongs to the past.

I have already alluded to the change in the treatment of pneumonia. The typing of the sputum, the administration of the appropriate serum intravenously generally seemed very complex to the general practitioner. A recent personal experience seems to me to be illustrative! A practitioner telephoned that he was sending a patient to the local hospital and could I see him. I asked if the patient didn't have pneumonia. No, the practitioner didn't think so but he would have an x-ray of his chest as he went by the x-ray room to his hospital room. After a while he telephoned "Well, you won't have to come out, he only has pneumonia and a leukocytosis and everything is fine." Only pneumonia; what a change!

I can remember the time when the diagnosis of pulmonary tuberculosis was both a science and an art. We practiced percussion and auscultation just as our surgical colleagues practiced tying knots. I still think there is something in it. But we all nowadays, including the patient and the family, insist on an x-ray. And your general practitioner can allay apprehensions about a continual cough by simply arranging for an x-ray of the chest. However, if the patient does happen to have tuberculosis I'll admit that the general practitioner is out of his depth. The modern treatment of tuberculosis no longer consists in rest; fresh air, milk; eggs and a desire to live but often demands one and perhaps several highly specialized forms of surgical technic. But on the other hand pulmonary tuberculosis is steadily and substantially decreasing in frequency.

Time was when the general practitioner awaited jaundice before he made the diagnosis of gallstones, and obvious bleeding before he diagnosed peptic ulcer. But nowadays the radiologist seems usually to make these diagnoses. Furthermore, by some route or other many cases of ulcer arrive in the offices of those who specialize in digestive disorders. While psychosomatic medicine bluntly states that most digestive disturbances are due to causes above the neck, nevertheless the trek goes on. The apostles of psychosomatic medicine find here the classic illustration of their philosophy.

In the cardiovascular field your general practitioner has not found the comfort from the electrocardiograph that he hoped. The interpretations of the electrocardiograms are not always simple and lucid, and subsequent therapy is not always obvious. Angina is often indefinite. Hypertension is often relative. Arrhythmias may be complicated. On the whole, whether he admits it or not or likes it or not, the general practitioner has to

depend on the specialty of cardiologists more than seems perhaps necessary.

I have given this rapid survey of certain fields in medicine with the purpose of indicating that medicine is ever changing and that the relations between the general practitioner and the specialist are always in a state of flux. The drift is not always away from the general practitioner but sometimes definitely at any given moment in his direction. These are the factors that must be evaluated in determining what is adequate medical care.

It will be noted that even if and when the general practitioner is furnished with proper and adequate x-ray equipment and interpretation, which means specialists' services, that is in some fields not sufficient. The supplementary use of certain technics or gadgets, as the electrocardiograph, in a goodly number of instances at this time does not seem to be always satisfactory.

I have not touched on the surgical specialists at all. This is largely because it seems to me at this moment that surgery is becoming a profession in itself and indeed has its own specialists. I have mentioned lung surgery, which actually is not within the province of a general surgeon. The neurologic surgeon is another example of a limited specialist within the profession of surgery.

I have deliberately omitted the relationship of psychiatry to the general practitioner and to adequate medical care. Obviously the custodial care of the manifestly insane is a problem for specialists. As the general practitioner meets this part of the problem, it is often the question of having the insane person committed to an institution.

But there are implications and imponderables far beyond the scope of this paper and indeed my ability to discuss them. The war has focused attention, too long postponed, on what is known as psychoneurosis. That problem is far too large for the number of physicians who may be regarded as having special training or interest in the field. The whole situation is rather chaotic. We have rather taken much of it for granted, as we once did the poor. And, like the weather, everybody talks about it but does nothing about it. Somehow or other in this vast field the general practitioner must play an important role. He obviously has certain advantages of familiarity with human behavior under usual family conditions and of individual relationships and actions.

DIAGNOSTIC SURVEYS IN DIAGNOSTIC CENTERS

It will be observed that I have not spoken particularly of hospitals, diagnostic centers, laboratories or clinics. Obviously major surgery will be done in a hospital. Specialized surgery, like chest surgery and neurologic surgery, will not be done in every small hospital. Adequate medical care demands not just the case and a hospital. It may demand a special hospital and a specialist within the profession of surgery. Furthermore, the x-ray equipment also obviously necessary in a hospital may be in a clinic or a diagnostic center. I have pointed out frequently that most patients who visit the Mayo Clinic never get to the hospital. In other places well known clinics are quite separate entities. In the clinic most of the diagnostic work is carried out and, if necessary, hospitalization is arranged. It is argued by some of the clinic advocates that such an arrangement is tremendously money saving. Hospital residence is apt to be expensive and, if utilized for a diagnostic survey which may be time consuming, ties up hospital space designed

for quite another purpose. Perhaps hospital trustees will devise some new types of buildings within the hospital areas so that diagnostic surveys can be carried out economically for the patient and conveniently for the diagnostician.

I have not in these remarks attempted to reevaluate adequate medical care. It has been my purpose rather to make random comments on the problem and once more to express the hope that other hands will develop something far better and far more comprehensive than the pioneer effort of over ten years ago.

NEED FOR CONTINUOUS REEVALUATIONS

I appreciate the changing conditions as medical science advances with its seven league boots. I appreciate too that our social standards change. But these considerations to my mind only make such studies more imperative. There should be constant and continuing evaluations of the changing conditions. We must know what place the general practitioner and the specialist has in adequate medical care. At the moment there are trends toward specialism within specialties, particularly in surgery. Yet insulin, liver therapy, the sulfonamides and penicillin tend to return many patients to the general practitioner. Likewise there are trends in the utilization of hospitals which must be considered in evaluating medical care. Social conditions both in the home and in industry create changes to which adequate medical care is always a goal, but as we move forward we push the goal ahead.

264 Beacon Street.

POST-TRANSFUSION HEPATITIS IN BATTLE CASUALTIES

AND A STUDY OF ITS PROPHYLAXIS BY MEANS OF
HUMAN IMMUNE SERUM GLOBULIN

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It has recently become increasingly well recognized that parenteral administration of whole blood or blood products to susceptible individuals may be followed by the occurrence of a disease which is clinically indistinguishable from common acute infectious hepatitis.¹ During the latter part of 1944 a large and increasing number of cases of acute hepatitis were seen at a large army general hospital within the continental limits of the United States which serves primarily as a center

From McCloskey General Hospital, Temple, Texas
This investigation was carried out in collaboration with the Commission on Measles and Mumps, Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, Preventive Medicine Service, Office of the Surgeon General, Washington, D. C.
1. Propper, S. A.: Hepatitis After Transfusion. *Ann. Int. Med.* 2: 677, 1938.
2. From McCloskey General Hospital, Temple, Texas
3. Jaundice Occurring One to Four Months After Transfusion of Blood or Plasma: Report of 7 Cases. *J. A. M. A.* 121: 1332 (April 24) 1943.
4. Morgan, H. V., and Williamson, D. A. J.: Jaundice Following Administration of Human Blood Products. *Brit. M. J.* 1: 750, 1943.
5. Turner, R. H.; Snavely, J. R., Jr.; Grossman, E. B.; Buchanan, R. N., and Foster, S. O.: Some Clinical Studies on Acute Hepatitis Occurring in Soldiers After Inoculation with Yellow Fever Vaccine. *Ann. Int. Med.* 20: 193 (Feb.) 1944.
6. Neefe, J. R.; Stokes, Joseph, Jr.; Reinhold, J. G., and Lukens, F. P. W.: Hepatitis Due to the Injection of Homologous Blood Products in Human Volunteers. *J. Clin. Investigation* 23: 836, 1944.

for amputation and neurosurgical cases. During the six month period from Nov. 1, 1944 to April 30, 1945 a series of 108 cases of acute hepatitis came under the care of one of us (E. B. G.). Of these cases 103, or 95 per cent, occurred in men who had recently been wounded in action in either the European or the Pacific theater of operations. The fact that the high incidence of the disease in this group of patients was not merely a reflection of the selected population of this hospital is demonstrated by the data included in table 1.

The clinical history in the battle casualty group was strikingly uniform. The patient had been wounded in action from 44 to 167 days prior to the development of symptoms of hepatitis, with a median latent period of 91 days and an average of 92.6 days. In 84 per cent of the group the onset of the disease occurred between the 8th and the 17th week after injury. The large majority had received whole blood transfusion, blood plasma or both, shortly after injury. A number of the patients in whom the latent period was long (more than four months) had received multiple blood transfusions, some as long as two months after injury. Other factors, such as severity of injury, early amputation, previous administration of sulfonamide drugs or penicillin, extensive infection and general clinical condition of the patient at the time of onset of hepatitis, appeared to play no contributory role in the incidence of the disease. Common sources of infection and secondary contact cases were not recognized. The clinical course of the disease was that seen in the usual case of infectious hepatitis. The fatality rate was 2 per cent (two deaths).

The investigation here reported was undertaken with two purposes: (1) to test the validity of the hypothesis that the hepatitis-causing agent was transmitted by blood or plasma transfusion and (2) to extend the previously reported studies of one of us² on the prophylaxis of infectious (epidemic) hepatitis by injection of human immune serum globulin (gamma globulin) to this group of patients.

During the three month period from Feb. 1 to April 30, 1945 information was obtained on all battle-casualty patients admitted to this hospital. These patients were then divided into five groups: (1) those who had received neither plasma nor whole blood, (2) those who had received plasma but not whole blood, (3) those who had received whole blood but no plasma, (4) those who had received both plasma and whole blood and (5) those concerning whom adequate infor-

TABLE 1.—Hepatitis in Battle Casualties and in Other Patients During Period from Nov. 1, 1944 to April 30, 1945

	Number	Per Cent of Total
1. Hepatitis cases:		
Battle casualties.....	103	95.4
Others.....	5	4.6
2. Total hospital admissions:		
Battle casualties.....	...	44.1
Others.....	...	55.9

mation was unobtainable because clinical records were incomplete and because these patients had been rendered unconscious for variable periods following injury.

The patients in group 1 were not given immune serum globulin injections. Groups 2, 3, 4 and 5 were each again subdivided into three subgroups, designated by the subscripts a, b and x in table 2. The x series are

2. Stokes, Joseph, Jr., and Neefe, J. R.: The Prevention and Attenuation of Infectious Hepatitis by Gamma Globulin. *J. A. M. A.* 127: 144 (Jan. 20) 1945.

composed of those who had sustained their injuries more than four months prior to admission to this hospital or who presented evidence of acute hepatitis on admission and therefore were eliminated from the test and control series. Of the remaining patients, alternate men were given injections of 10 cc. of human immune

TABLE 2.—Battle Casualties Admitted to the Hospital Between February 1 and April 30, 1945

	1	2	3	4	5	6
	Series	Globulin Injection	Total Number	Number with Hepatitis	Hepatitis Occurring 7 Days After Assignment to Control or Test Series	Per Cent with Hepatitis
No plasma or blood	1	0	322	1	—	0.3
Previous plasma only	2 a	+	53	1	1	1.9
	2 b	0	52	4	1	7.7
	2 x	0	17	0	—	0
Previous blood only	3 a	+	35	0	0	0
	3 b	0	35	3	1	8.6
	3 x	0	16	0	—	0
Previous plasma and blood	4 a	+	251	10	5	4.0
	4 b	0	251	33	7	13.1
	4 x	0	167	11	—	6.6
History not clear	5 a	+	45	0	0	0
	5 b	0	46	4	1	8.7
	5 x	0	29	1	—	3.4
Total.....			1,319	68		5.2

a. Patients given globulin.

b. Alternate controls who received no globulin.

x. Patients eliminated from test and control series.

serum globulin (obtained from the U. S. Army Medical Supply Depot) on admission and again in one month. No other selection of cases for globulin injection or control series was used. It was found that selection of alternate cases resulted in random sampling of battle casualties in these two groups. Of the globulin injected group, 10.5 per cent of the patients came from the Pacific theater, 35.5 per cent had been in the Mediterranean theater and 54 per cent had been in the European theater of operation but not in the Mediterranean. For the control group the figures for the geographic distribution were 7.5 per cent from the Pacific theater, 38.5 per cent from the Mediterranean theater and 54 per cent from the European theater of operation.

Periodic icterus index determinations on blood serum and methylene blue tests of urine for bilirubin³ were done. All patients showing abnormal laboratory findings or manifesting symptoms of hepatitis were examined by one of us. No patient was considered to have hepatitis on the basis of laboratory findings alone, but the diagnosis was made only when the laboratory findings were corroborated by the clinical evidence of manifest jaundice or hepatic enlargement accompanied by the usual subjective symptoms of the disease without frank clinical jaundice. Six patients (9 per cent of the cases of hepatitis developing in this group) were diagnosed as having hepatitis without jaundice. These 6 cases were proportionately distributed among the several series that have been described.

Results of these studies are summarized in table 2. The studies are still incomplete for the reason that an appreciable proportion of the cases included in this tabulation have been under observation for an insufficient period at the time of writing.

3. Franke, K.: Methylene Blue, a Very Simple Practical Reagent for the Detection of Bilirubin. *Med. Klin.* 27: 94, 1931. Fillinger, K., and Menkes, K.: Quantitative Bilirubin Determination in the Urine with the Methylene Blue Method. *Wien. klin. Wchnschr.* 40: 133, 1933. Myers, C. P.: Use of Methylene Blue in Testing for Bilirubin in the Urine. *J. Indust. Hyg. & Toxicol.* 27: 52, 1945.

The data on incidence of hepatitis as related to previous blood transfusion or blood plasma administration are given in table 3. In line 1 are given the data for patients who had received no blood or plasma, in line 2 the data for patients who had been known to have received blood or plasma, and in line 3 the data for those patients to whom it is believed, but not definitely known, that blood products were given. The conclusion that the hepatitis-causing agent was blood transmitted appears inescapable.

The preliminary results of the study of prophylaxis of hepatitis by gamma globulin injection are summarized in table 4. In line 1 are given the total figures for the incidence of hepatitis to date of writing (July 25, 1945) in the a (globulin) subgroups of series 2, 3, 4 and 5 of table 2, and in line 2 the corresponding data for the b (control) subgroups. Of 384 patients who received globulin injections, 11 developed hepatitis. Two of these had clinical manifestations of the disease prior to globulin administration, and 4 developed obvious evidence of the disease 4, 5, 5 and 6 days after injection, respectively. It is possible that the immune serum globulin was administered to those patients too late in the incubation period to be of value. There was no significant clinical or laboratory evidence of attenuation of the disease in these patients. Five patients developed hepatitis more than one week after globulin injection. In all of these, although frank jaundice developed, the clinical course was very mild, suggesting that the disease may have been attenuated by globulin administration. The 44 cases (11.5 per cent) of the control series of 384 patients represents the minimum incidence of the disease in this control group. A number of these patients have been under observation for an insufficient period, and cases of hepatitis are continuing to appear in this control group.

COMMENT

The reporting of this series of cases appears important in view of the high morbidity and mortality recently experienced both in England and in the United States from hepatitis secondary to the administration of blood products in battle casualties. Also the primary reason for such a report lies in the highly significant protection against hepatitis obtained by the use of gamma globulin. Previous experience with the use of gamma globulin in three epidemics of hepatitis obtained by one of us⁴ in collaboration with Capt. John R. Neefe, Capt. Sydney S. Gellis and others had clearly indicated its

TABLE 3.—Incidence of Hepatitis Among Battle Casualties Admitted to Hospital from Feb. 1 to April 30, 1945 as Related to Previous Transfusion

	Total Number	Hepatitis	
		Number	Per Cent
1. Received no blood or plasma.....	322	1	0.3
2. Received blood or plasma; no globulin given	378	51	9.5
3. Insufficient data; no globulin given.....	73	5	6.7

protective and attenuating effect in the epidemic disease, but its value had not been determined in the hepatitis resulting from blood products used in battle casualties. The cases occurring in the injected group were mild, indicating probably some degree of attenuation as a

4. Gellis, S. S.; Stokes, Joseph, Jr.; Brother, G. M.; Hall, W. M.; Gilmore, H. R., and Beyer, L.: The Use of Human Immune Serum Globulin (Gamma Globulin) in Infectious (Epidemic) Hepatitis in the Mediterranean Theater of Operations: I. Studies on Prophylaxis in Two Epidemics of Infectious Hepatitis, to be published. Stokes and Neefe.

result of the gamma globulin, despite its injection at the end of an incubation period of several months. The protective effect of the gamma globulin suggests either that the agent from these blood products producing hepatitis is the same agent as that occurring in the epidemic hepatitis in which gamma globulin previously

TABLE 4.—Prevention of Hepatitis by Human Immune Serum Globulin (Gamma Globulin)

	Total Number	Total Hepatitis		Hepatitis Occurring More Than 1 Week After Assignment to Control or Test Series	
		Number	Per Cent	Number	Per Cent
1. Total given globulin	384	11	2.9	5	1.3
2. Total control series	384	44	11.5	34	8.9

had been effective or that antibodies protective against more than one agent producing hepatitis have been concentrated in the globulin from the large pools of plasma.

Although some evidence, as yet inconclusive, suggests that more than one agent or more than one strain of the same agent may produce a type of hepatitis which possesses in general the same clinical and pathologic picture, the data here reported would neither support nor contradict such evidence. The history of a long incubation period in the casualties included in this report and in those investigated in other hospitals in the zone of interior is probably due to the fact that those having short incubation periods were hospitalized in the European and Mediterranean theaters of operation. Short incubation periods of approximately 20 to 30 days have been noted following parenteral injection of homologous blood products in the European and Mediterranean theaters of operation and in injected volunteers in the zone of interior, but such reported occurrences have been relatively few. Further studies of these phenomena in such casualties and in human volunteers will be necessary before an understanding of the problem of single or multiple etiology can be obtained.

SUMMARY

1. A series of 103 cases of post-transfusion hepatitis occurred within a period of six months at one United States Army general hospital.

2. Data indicate that the hepatitis-causing agent was transmitted to these patients through the medium of blood plasma or whole blood transfusion.

3. Evidence indicates that the early administration of human immune serum globulin was effective in this series of cases.

4. This series of cases is to be further studied and reported at a later date.

ADDENDUM

A study similar to the one reported was initiated somewhat later at another general hospital (to be reported by Col. G. G. Duncan, A. U. S., Lieut. Col. H. A. Christian, A. U. S., and Joseph Stokes Jr.). The procedure differed only to the extent that a single injection of gamma globulin was given as compared with the use of a second injection one month after the first in the present study. In this second study the use of gamma globulin appeared to have no effect on the incidence of homologous serum hepatitis in battle casualties who had received transfusions of blood or plasma. Recently an experimental study of the neutralizing effect of one preparation of gamma globulin on one causative agent of serum hepatitis has been conducted by Capt. Sydney S.

Gellis, M. C., A. U. S., Capt. John R. Neefe, M. C., A. U. S., and one of the present authors (J. S. Jr.). Under these experimental conditions (to be reported) neutralizing antibodies for this causative agent of serum hepatitis apparently were absent, the gamma globulin having no effect on the incidence of hepatitis in human volunteers injected with this agent. Thus the results of the use of gamma globulin for prevention of homologous serum hepatitis have been conflicting to date, the globulin having been very effective under the circumstances described in the present report but apparently ineffective under other conditions. Although no explanation of the conflicting results is at hand, the following factors may have been influential: (1) the possibility that immunologically different agents were concerned, (2) the possible variation in antibody content of different preparations of gamma globulin and (3) the possible beneficial effect of repeated injections of gamma globulin in view of the long incubation period of the disease (two to four months). Further studies obviously are necessary to clarify these points and to establish the place of gamma globulin in the prevention of homologous serum hepatitis.

THE RECOGNITION OF PRIMARY HYPERPARATHYROIDISM

AN ANALYSIS OF TWENTY-FOUR CASES

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The discovery that hyperparathyroidism is the cause of generalized osteitis fibrosa cystica has led to a widespread assumption that hyperparathyroidism manifests itself only as a disease of bone.¹ Because osteitis fibrosa cystica is a great rarity, it has been assumed that hyperparathyroidism is equally rare. Both of these assumptions have been proved to be false but they have nonetheless persisted.

In 1934 Albright and his associates² at the Massachusetts General Hospital reported 17 proved cases of hyperparathyroidism, most of which they had observed during a period of two years. Analysis of these cases led them to conclude that (1) hyperparathyroidism can occur without evident disease of bone, (2) involvement of the urinary tract is a more common and more important manifestation of hyperparathyroidism than involvement of the skeleton, (3) hyperparathyroidism is relatively common and (4) it is the etiologic factor in the formation of renal calculi in an appreciable number of cases. Subsequent experience of this group of investigators has amply substantiated these conclusions.³ By 1942 Cope⁴ was able to report the remarkable total of 67 proved cases of hyperparathyroidism which had been observed at the Massachusetts General Hospital over a period of ten years. Classic osteitis fibrosa

cystica had been encountered in about a third of these and minimal or atypical osseous changes had occurred in another third, while in the remainder of the cases evidence of skeletal involvement was altogether lacking.

The experience of the investigators at the Massachusetts General Hospital has been unique with regard both to the remarkably large number of patients proved to have the disease and to the frequency with which it was encountered in the absence of skeletal involvement. By contrast, there have been few case reports from other sources describing hyperparathyroidism without classic bone disease.⁵ The great majority of published reports have continued to deal with patients having classic generalized osteitis fibrosa cystica, usually of severe degree.⁶

The first case of hyperparathyroidism to be observed at the Mayo Clinic was reported by Wilder⁷ in 1929. For many years the diagnosis was made infrequently.⁸ Alexander, Pemberton, Kepler and Broders⁹ were able to collect data on only 14 cases of proved hyperparathyroidism which had been observed at the clinic between 1929 and September 1942. Considering the much greater incidence which had been encountered by Albright and his colleagues, it appeared reasonable that here as well as elsewhere the diagnosis was being overlooked. Accordingly, early in 1943 a deliberate attempt was made to improve diagnostic accuracy. To this end the collaboration of internists, urologists and surgeons was solicited.

In approximately two and a half years (Sept. 30, 1942 to Jan. 30, 1945) in 24 additional cases hyperparathyroidism has been proved at operation at the Mayo Clinic, in contrast to 14 cases observed during the preceding fourteen years. Our experience with these patients confirms fully the observations made much earlier by the Boston workers. It is our purpose in this report to analyze the diagnostic features presented by this group of cases and to emphasize again the frequency and importance of this disease.

The increase in the frequency with which hyperparathyroidism was recognized was due in part to deliberate search, particularly among patients having renal calculi and in part to careful adherence to the diagnostic

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- 10 Soffer, L. J., and Cohn, Clarence. Primary and Secondary Hyperparathyroidism. *Arch. Int. Med.* 71: 630-649 (May) 1943.
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- 24 Jaffe, H. L. Primary and Am. A Study. *Goster*, 1940, pp. 252-262.

From the Division of Medicine (Dr. Keating) and the Section on Urology (Dr. Cook), Mayo Clinic.
1 Shelling, D. H. The Parathyroids in Health and in Disease, St. Louis, C. V. Mosby Company, 1935.
2 Albright, Fuller, Aub, J. C., and Bauer, Walter. Hyperparathyroidism—A Common and Polymorphic Condition as Illustrated by 17 Proved Cases from One Clinic, *J. A. M. A.* 102: 1276-1287 (April 21) 1934.
3 Albright, Fuller; Sulkowitch, H. W., and Bloomberg, Esther. Further Experience in the Diagnosis of Hyperparathyroidism, Including a Discussion of Cases with a Minimal Degree of Hyperparathyroidism, *Am. J. M. Sc.* 193: 800-812 (June) 1937.
4 Cope, Oliver. Hyperparathyroidism. Sixty Seven Cases in Ten Years, *J. Missouri M. A.* 39: 273-278 (Sept.) 1942.

criteria outlined by Albright and his associates.³ The disease was first suspected because of symptoms referable to the skeleton in 6 of the 24 cases and because of symptoms referable to renal calculi in 18 cases.

CLASSIFICATION

The patients may be divided into three groups, depending on the extent of skeletal involvement as indicated by roentgenographic examination. Group 1 includes 7 cases (29 per cent) presenting the classic picture of osteitis fibrosa cystica generalisata. Three of these patients had renal calculi, and 2 of the remainder had miliary calcification of the renal parenchyma. Group 2 includes 9 cases (38 per cent) which showed minimal or atypical demineralization of the skeleton. All of these patients had, or had had, renal calculi. Group 3 includes 8 cases (33 per cent) in which there were renal calculi but no evidence whatever of skeletal involvement. Thus disease of bone was more or less evident in some degree in 67 per cent of the cases, whereas renal calculi or calcification of the kidneys occurred in 92 per cent. We have not observed any example of a fourth group represented in Albright's series by 1 case; that is, minimal demineralization of the skeleton without renal calculi.

The average age of the patients at the time of operation was 44½ years. The youngest patient was a man of 25 and the oldest a woman of 68. There were 14 men and 10 women in the series. In the literature at large and in other series which have been reported, women have generally outnumbered men in a ratio of 3 or 4 to 1.¹⁰ The unusual sex distribution in our series may be in part a reflection of the preponderance of renal cases in our material. Group 1 (classic bone disease) comprised 4 women and 3 men, whereas group 3 (no apparent bone disease) comprised 6 men and 2 women. One may therefore wonder whether classic bone disease is more likely to occur in women and renal stones more frequently in men.

Figure 1 shows the duration of symptoms in the three groups of cases, using the medical history as a basis for dating the earliest symptom. The average duration of symptoms in group 1 (classic bone disease) was six and a half years, in patients having minimal bone disease (group 2) thirteen years and in patients without bone disease (group 3) 6.8 years. Some implications of these data will be mentioned later. Two patients had definite histories of renal stones of twenty-six and twenty-seven years' duration, respectively; yet both these patients showed minimal demineralization of the skull as the sole evidence of skeletal involvement. By contrast, another patient had no symptom prior to a single renal colic twelve days before examination. Since this patient also was found to have multiple renal calculi and visible demineralization of the skull, it is evident in this instance that the disease must have been present considerably longer than the history would suggest.

SYMPTOMATOLOGY

The variable manifestations of hyperparathyroidism have been repeatedly emphasized.¹¹ The essential character of the disease was early described by Hannon, Shorr, McClellan and Du Bois,¹² by Bauer, Albright

and Aub¹³ and by Barr and others¹⁴ in reports dealing with the first instances of hyperparathyroidism recognized in this country. The symptoms presented by patients having hyperparathyroidism may be divided into three groups:¹⁵ (1) symptoms resulting from the chemical changes in the blood and urine, (2) symptoms resulting from secondary involvement of the urinary tract and (3) symptoms resulting from involvement of the skeleton.

Symptoms Associated with the Chemical Changes in the Blood.—Hyperparathyroidism is characterized by an increase of calcium and a reduction of inorganic phosphorus in serum. As one would expect, symptoms occur which represent the antithesis of parathyroid tetany. Pronounced muscular atony is found and, with it, weakness, fatigue and constipation. Anorexia, loss of weight, nausea and vomiting also are encountered. In many of the cases of advanced hyperparathyroidism with skeletal involvement reported in the literature, such general symptoms have been very severe. In the present series, however, such symptoms were not prominent.

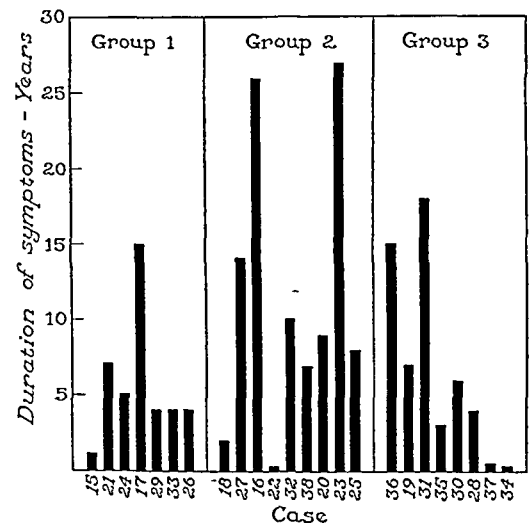


Fig 1—The duration of symptoms in the three groups of cases, using the medical history as a basis for dating the earliest symptom. The average duration of symptoms in group 1 (classic bone disease) was six and a half years, in patients having minimal bone disease (group 2) thirteen years and in patients without bone disease (group 3) 6.8 years. Some implications of these data will be mentioned later. Two patients had definite histories of renal stones of twenty-six and twenty-seven years' duration, respectively; yet both these patients showed minimal demineralization of the skull as the sole evidence of skeletal involvement. By contrast, another patient had no symptom prior to a single renal colic twelve days before examination. Since this patient also was found to have multiple renal calculi and visible demineralization of the skull, it is evident in this instance that the disease must have been present considerably longer than the history would suggest.

In the patients having classic bone disease, general symptoms were severe in 3 cases and moderate or inconspicuous in the others. Conspicuous weakness, fatigue, nausea and vomiting occurred in 2 cases with minimal bone disease (group 2); in 4 other cases of this group these symptoms were minimal and in 3 cases entirely absent. Mild symptoms occurred in half of the patients without evident bone disease (group 3). The foregoing symptoms could be correlated roughly with the degree of hypercalcemia.

Except when they were conspicuous, the general symptoms related to hypercalcemia offered little clue to the diagnosis, largely because such symptoms are not distinctive and are frequently encountered in other conditions, particularly functional states.

10 Wilder, R. M., and Howell, L. P.: Etiology and Diagnosis in Hyperparathyroidism: A Review of 135 Proved Cases, J. A. M. A. 106: 427-431 (Feb 8) 1936. Jaffe.
11 Jaffe.
12 Hannon, R. K.; Shorr, E.; McClellan, W. S., and Du Bois, E. F.: A Case of Osteitis Fibrosa Cystica (Osteomalacia?) with Evidence of Hyperactivity of the Parathyroid Bodies. Metabolic Study I, J. Clin. Investigation 8: 215-227 (Feb) 1930.

13 Bauer, Walter; Albright, Fuller, and Aub, J. C.: A Case of Osteitis Fibrosa Cystica (Osteomalacia?) with Evidence of Hyperactivity of the Parathyroid Bodies. Metabolic Study II, J. Clin. Investigation 8: 229-248 (Feb) 1930.
14 Barr, D. P.; Bulger, H. A., and Dixon, H. H.: Hyperparathyroidism, J. A. M. A. 92: 951-952 (March 23) 1929.
15 Albright, Fuller: The Parathyroids—Physiology and Therapeutics, J. A. M. A. 17: 527-533 (Aug 16) 1941.

Polyuria.—The excessive excretion of calcium and phosphorus in the urine which is characteristic of hyperparathyroidism may be accompanied at times by severe polyuria and polydipsia. At times these symptoms have been conspicuous enough to lead to an erroneous diagnosis of diabetes insipidus¹⁵ (case 3, reported by Allan,¹⁶ and case 17).¹⁷ Conspicuous polyuria and polydipsia occurred in 11 (46 per cent) of the cases, distributed evenly among the three groups. In 16 cases (67 per cent) there was persistently dilute urine, with a specific gravity which never exceeded 1.015. This may be regarded either as the result of hypercalciuria or perhaps as evidence of impaired renal function.

tubules. Albright and his associates¹⁸ have shown the latter to be the probable explanation for nephrocalcinosis, or diffuse calcification of the renal parenchyma, which occurs in some instances of hyperparathyroidism. Thus urinary symptoms may be produced in hyperparathyroidism (1) by urinary calculi per se, (2) by infection of the urinary tract and pyelonephritis resulting from renal calculi or (3) by impaired urinary function resulting from nephrocalcinosis.

Symptoms attributable directly or indirectly to renal calculi occurred in 18 of the 24 cases. Such symptoms did not differ in any discernible respect from those resulting from renal calculi from other causes. At first hyperparathyroidism was sought particularly in patients with a long history of renal calculi or in those found on examination to have multiple or bilateral calculi. It soon became apparent, however, that, as Albright had stated, hyperparathyroidism must be suspected in any patient having renal calculi containing calcium.

Bilateral multiple calculi occurred in 7 of the 24 cases in our series, multiple calculi limited to one kidney in 7 cases and a solitary renal calculus in 4 cases. In 2 of the latter the symptoms produced by the solitary calculus were the only clinical symptoms of hyperparathyroidism. In 1 case the presenting symptoms were those related to vesical calculi, bilateral renal calculi being found on examination. In 2 cases hyperparathyroidism was suspected from a history of bilateral renal colics alone, no renal calculi being present at the time of examination. Fourteen of the patients had previously undergone a total of twenty operations for renal calculi. Nephrectomy had been performed on 2 of these, and 1 of the 2 had a permanent nephrostomy in the remaining kidney.

Symptoms Referable to the Skeleton.—Symptoms referable to the skeleton, when present, may vary exceedingly from vague or insignificant aches and pains to the disability and pain accompanying the pathologic fractures, cysts, tumors and deformities which occur in the classic bone disease of hyperparathyroidism. Pathologic fractures occurred in 5 of the 7 cases of classic bone disease. Biopsy revealed giant cell tumors (osteoclastoma) in 2 of these. The absence of gross deformities, loss of height and other evidences of severe osteitis fibrosa cystica generalisata in the cases here reported attests only the fact that the skeletal disease did not happen to be far advanced in these cases. Skeletal pain, backache or vague aches and pains in the muscles were present in all of the cases in which there was classic bone disease (group 1), in 3 of the 9 cases in which there was minimal bone disease (group 2) and in none of the cases without roentgenographic evidence of bone disease (group 3).

DIAGNOSTIC CRITERIA

The diagnosis of hyperparathyroidism at present depends on the demonstration of (1) an increase of calcium in serum, (2) a reduction of inorganic phosphorus in serum and (3) an increased loss of calcium in the urine.

Calcium in Serum.—The normal value of calcium in serum is 10.0 mg. per hundred cubic centimeters plus or minus 1.0 mg. Many authors have asserted that for a diagnosis of hyperparathyroidism to be warranted the level of calcium in serum must exceed 12.0 or 12.5 mg.

Fig. 2.—The levels of calcium, inorganic phosphorus and alkaline phosphatase in serum of patients with hyperparathyroidism. The cases in each group are arranged in the order of average calcium values. Each vertical column represents determinations in an individual case, black dots representing individual determinations and circles the average level.

Symptoms Referable to the Urinary Tract.—The excessive excretion of calcium and phosphorus in the urine as a result of hyperparathyroidism provides conditions which favor the formation of renal calculi in the renal pelvis or even deposition of calcium in the renal

16. Allan, F. N.: Hyperparathyroidism: Report of a Case, Proc. Staff Meet., Mayo Clin. 6: 684-686 (Nov. 18) 1931.

17. In agreement with the practice employed elsewhere, the cases in this and subsequent reports are numbered consecutively in the order in which the diagnosis was proved. The first 14 cases to be observed at the clinic were reported by Alexander and his associates.⁹ The first case comprising the present series is, therefore, number 15. Case 16 has been reported in detail elsewhere (Keating and Cook⁹).

18. Albright, Fuller; Baird, P. C.; Cope, Oliver, and Bloomberg, Esther: Studies on the Physiology of the Parathyroid Glands: IV. Renal Complications of Hyperparathyroidism, Am. J. M. Sc. 157: 49-65 (Jan.) 1934.

per hundred cubic centimeters.¹⁹ Albright and his associates³ in 1937 indicated that this is not the case, and our observations show that, by adherence to such standards, many cases of hyperparathyroidism would be overlooked.

The average levels of calcium in serum in the three groups of cases are shown in figure 2. The values are definitely higher in the cases of classic bone disease (group 1) than in the groups presenting minimal or absent bone disease, although plenty of overlap occurred. In 12 of the 24 cases the average concentration of calcium was less than 12.5 mg. per hundred cubic centimeters. In 4 cases (17 per cent) the average level of calcium fell within the normal range, while in 7 cases (29 per cent) one or more individual determinations fell within the normal range. It is apparent that the elevation of calcium need be very slight indeed. Repeated determinations over a period of time are often necessary to establish the significance of slight changes in suspected cases.

The concentration of calcium and consequently its diagnostic significance depend on the concentration of serum proteins.¹⁵ The total calcium includes two chief fractions, one of which is combined with serum protein as calcium proteinate, the other being ionic calcium. Calcium proteinate varies with alterations in the concentrations of proteins and is not primarily affected by parathyroid hormone. Ionic calcium is specifically affected by parathyroid hormone. Persons who have a lowered level of serum protein and normal total calcium may actually have significantly elevated ionic calcium. While neither fraction can be measured directly, both can be estimated from the concentration of total calcium and total protein by the use of the nomogram prepared by McLean and Hastings.²⁰ Certain conditions sometimes considered in differential diagnosis, notably multiple myeloma and sarcoidosis, are often accompanied by hyperproteinemia and by hypercalcemia secondary to the elevated proteins. In our experience serum proteins reduced sufficiently to mask hypercalcemia are rarely encountered as a diagnostic problem in patients having hyperparathyroidism. On the other hand, the demonstration of elevated proteins has been a relatively frequent means of avoiding an erroneous diagnosis of parathyroid disease.

Inorganic Phosphorus.—The normal level of inorganic phosphorus is 3.5 mg. per hundred cubic centimeters of serum plus or minus 0.5 mg. The average depression of the serum phosphorus is small, and considerable fluctuations of the concentration of inorganic phosphorus may occur in the same patient from time to time (fig. 2). One or more determinations fell within the normal range (3.0 to 4.0 mg. per hundred cubic centimeters) in 6 cases (25 per cent), and the average value of inorganic phosphorus was at the lower limit of the normal range in 4 cases (17 per cent). In several instances the depression of phosphorus was the best clue to the diagnosis, particularly when the value of serum calcium was equivocal.

Alkaline Phosphatase.—Albright and his associates³ have emphasized that elevation of alkaline phosphatase is a reflection of bone disease but not of hyperparathyroidism per se. This is clearly in agreement with our data (fig. 2). Abnormal levels of serum phosphatase occurred in all of the cases comprising group 1, minimal

elevation was observed in 2 of those comprising group 2 and with 1 exception all of those in group 3 had normal levels of alkaline phosphatase.

The assumption that the level of alkaline phosphatase in serum reflects osteoblastic activity in bone and not parathyroid function is further supported by the fact that, after removal of a hyperfunctioning parathyroid tumor, the phosphatase remained elevated long after the serum calcium, serum phosphorus and urinary excretion of calcium had returned to normal.

Urinary Excretion of Calcium.—The Sulkowitch test,²¹ brought into wide use by Albright, has proved useful as a rough measure of excessive excretion of calcium. It has been most helpful in ruling out hyperparathyroidism. Albright²² stated that its interpretation depends on the concentration of the urine, the previous diet, the age of the patient, the presence or absence of renal disease and other factors. In the absence of renal disease, a low level of excretion of calcium as indicated by the Sulkowitch test in a concen-

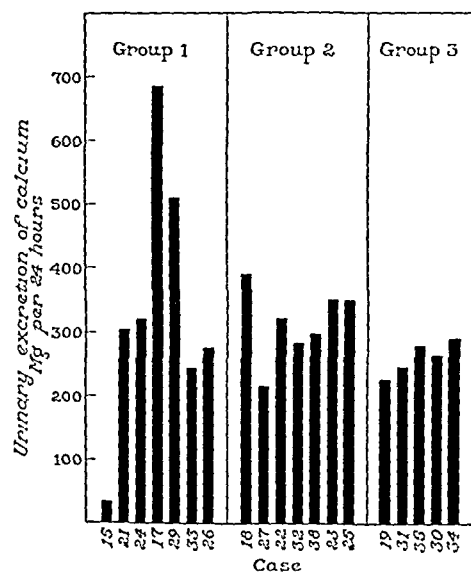


Fig. 3.—The excretion of calcium in the urine in patients with hyperparathyroidism. In most instances the quantity shown is the average excretion per day determined over a period of three to six days with the patient on a weighed diet low in calcium.

trated specimen of urine effectively rules out hyperparathyroidism.

The Sulkowitch test is performed by mixing an equal volume of urine and Sulkowitch reagent. The calcium present is precipitated when the test tube is inverted a few times. A minimal precipitate is called a grade 1 response and is considered to indicate a normal concentration of calcium. More pronounced calcinuria is graded 2, 3 or 4. This test was recorded in 15 of the cases in this series. In 1 case a grade 1 response was consistently elicited in the presence of pronounced polyuria. In 5 cases the precipitate was graded 2 and in 9 cases it was graded 3.

When the diagnosis is otherwise fairly obvious, a strongly positive Sulkowitch reaction which cannot be explained on other grounds has been considered as supporting the diagnosis of hyperparathyroidism; but in most instances it is preferable to determine quantitatively the excretion of calcium under known dietetic

¹⁹ Shell ng¹, Jaffe⁶, Griffin, Osterberg and Bransch²⁷.
²⁰ McLean, I. C., and Hastings, A. B.: Clinical Estimation and Significance of Calcium Ion Concentrations in the Blood. *Am. J. M. Sc.* 159: (1) 613 (May) 1935.

²¹ Barney, J. D., and Sulkowitch, H. W.: *Progress in the Measurement of Urinary Calcium*, J. Urol. 37: 746 762 (June) 1937.

²² Albright, Fuller: Personal communication to the author.

conditions. The diet used by Bauer and Aub²³ has been employed and in most cases the excretion of calcium has been determined in three successive twenty-four hour specimens of urine and the average used. The diet employed contains 125 mg. of calcium per day. Most normal persons will excrete less than 100 mg. of calcium per day on this diet. Albright²² regards values between 125 and 200 mg. per day as highly suspicious and values in excess of 200 mg. as definitely abnormal. The values determined in the present series of cases are shown in figure 3.

Röntgenologic Findings.—In its most advanced form, osteitis fibrosa cystica generalisata resulting from hyperparathyroidism is characterized by widespread demineralization of the entire skeleton, pathologic fractures, multiple cystic regions, expanding tumors of bone and many sorts of skeletal deformities. Camp and Ochsner²⁴ in 1931 called attention to the characteristic

The patients comprising group 2 were so classified because the roentgenologic appearance of the skeleton lacked the characteristic features described. In 2 of the patients minimal demineralization of the hands and skull together with subcortical absorption cysts was present. In both cases, however, very extensive

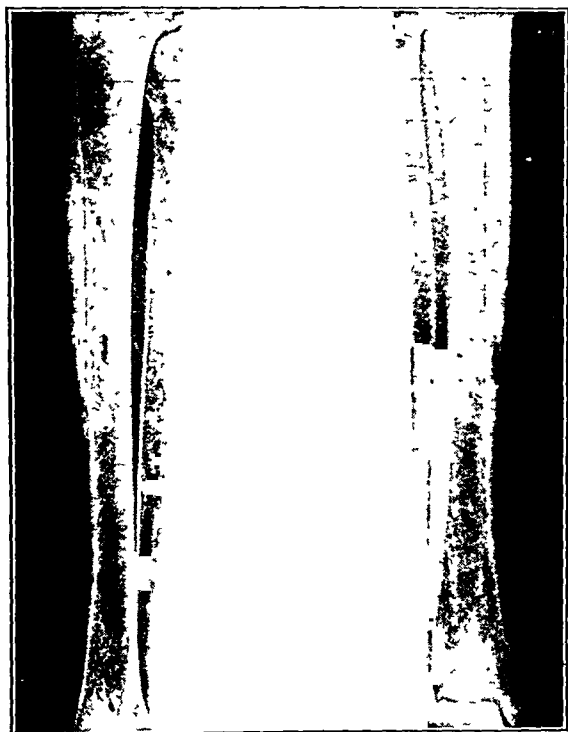


Fig. 4.—The tibia in a case showing extensive bone disease. Diffuse demineralization, typical fibrocystic appearance and subcortical absorption are shown.

roentgenologic appearance of the demineralized skeleton in hyperparathyroidism, the fibrous appearance of the long bones, the characteristic (but not of itself pathognomonic) miliary osteoporosis of the skull and the significance of subcortical cystic regions.

The cases in which there was classic bone disease (group 1) exhibited comparatively few of the most extensive bony changes. One patient had sustained almost innumerable pathologic fractures resulting from a coexisting malady accompanied by uncinate fits. Cyst-like areas in the long bones, the typical fibrous rearrangement of the trabecula, the characteristic changes in the skull and the diffuse demineralization were present in all 7 cases in this group (figs. 4, 5 and 6).

23. Bauer, Walter, and Aub, J. C.: Studies of Inorganic Salt Metabolism. I. The Ward Routine and Methods, *J. Am. Dietet. A.* 3: 106-115 (Sept.) 1927.

24. Camp, J. D., and Ochsner, H. C.: The Osseous Changes in Hyperparathyroidism Associated with Parathyroid Tumor: A Roentgenologic Study, *Radiology* 17: 63-69 (July) 1931.

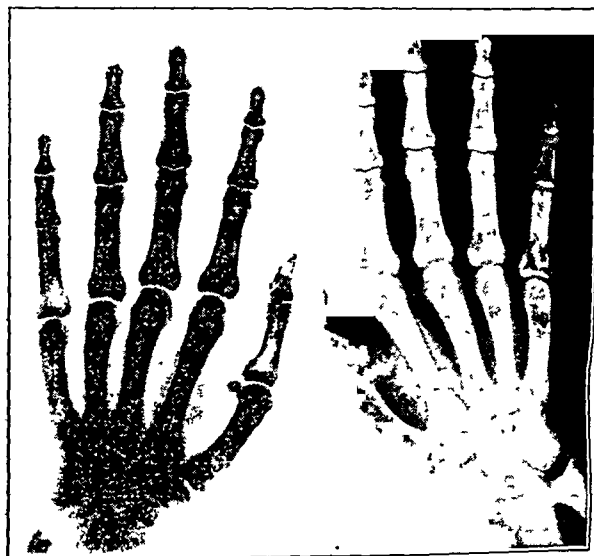


Fig. 5.—The hands in a case showing extensive bone disease (case 17). Despite relatively well calcified bones there are subcortical absorption of the phalanges and a pathologic fracture of a thumb, a biopsy of which showed osteoclastoma.

demineralization of the spinal column was accompanied by ballooning of the intervertebral disks. This observation, together with the presence of normal alkaline phosphatase, led us to surmise that in these cases hyperparathyroidism may have been complicated by senile osteoporosis and that the senile osteoporosis



Fig. 6.—The skull in a case showing extensive bone disease. In addition to miliary osteoporosis of moderate degree there are disappearance of the tables of the skull and a circumscribed area of demineralization in the frontal region. The latter is an unusual finding.

was an independent entity not related to parathyroid hyperfunction. These cases will be reported elsewhere.

The remaining 7 patients comprising group 2 were reported by the roentgenologist as showing minimal osteoporosis of the skull. Changes in the remainder of the skeleton, if present, were too mild to be recog-

nized. In several of these cases, as a matter of fact, the presence of osteoporosis even in the skull was equivocal but, in order to separate clearly those cases without any evidence of skeletal disease from those having it, any case in which there was any question of minimal bone disease was arbitrarily assigned to this group for comparison. The patients comprising group 3 are so classified because the roentgenologic appearance of the skeleton was regarded as entirely normal in density and architecture.

Dental Roentgenograms.—The dental pathologic changes in hyperparathyroidism have been discussed by Borg,²⁵ by Stafne and Austin²⁶ and more recently by Strock.²⁷ These writers have emphasized the fact that in a number of instances of hyperparathyroidism the presenting symptoms have been the result of changes in the oral cavity. Strock called attention to the frequency with which epulis and malocclusion occurred. He also emphasized the characteristic ground glass osteoporosis and the loss of the lamina dura which was observed in the dental roentgenogram of such patients. No increase in dental caries has been observed in patients with parathyroid disease. Albright has emphasized the usefulness of the dental roentgenogram in the diagnosis of the bone disease of hyperparathyroidism and has particularly stressed the significance of the lamina dura.

Dental roentgenograms were made in 13 of our cases. The characteristic roentgenologic changes described by Strock were observed in all 4 of the cases in group 1 for which dental roentgenograms were available, and definite, although mild, changes were present in 2 of the 3 cases in group 2. In 6 cases from group 3, however, the dental roentgenograms, like those of the skeleton, were entirely normal. The most striking change in the roentgenograms of the jaws (fig. 7) was a pronounced and diffuse derangement of the normal osseous pattern associated with evident diffuse demineralization. There was complete disappearance of the lamina dura in the 2 most severe cases in group 1 but only partial disappearance in the remainder. One case showed cyst formation.

Mild degrees of osteoporosis may be detected more readily in the dental roentgenograms than elsewhere because the teeth, the density of which is unaffected by hyperparathyroidism, serve as indexes of opacity (fig. 7). Since disappearance of the lamina dura is observed in several purely dental conditions, this criterion is significant only if associated with diffuse demineralization and obvious derangement of the bony architecture.

Urologic Features.—Urologic examination of these patients did not disclose any findings which could be regarded as truly pathognomonic. Renal calculi, when present, were multiple or single, unilateral or bilateral (fig. 8). A majority of the patients having renal calculi also had infection of the urinary tract, often of serious proportions. Infection seemed related chiefly to the extent and duration of the renal calculi.

It has been generally assumed that renal calculi resulting from hyperparathyroidism consist of calcium and phosphorus, since both of these substances are excreted in excessive quantities. Calculi were analyzed qualitatively in 9 of our cases. In 6 of them the stones

were reported to consist mostly of calcium oxalate. In 1 case the stone consisted of calcium phosphate; in another, of calcium phosphate and oxalate, and, in another, of calcium phosphate and carbonate. This surprising predominance of oxalate stones has been observed also by Albright.

In 4 cases the roentgenograms disclosed diffuse miliary calcification involving the parenchyma of both kidneys. Two of these had in addition discrete stones in the renal pelvis and a history of renal colics. In the

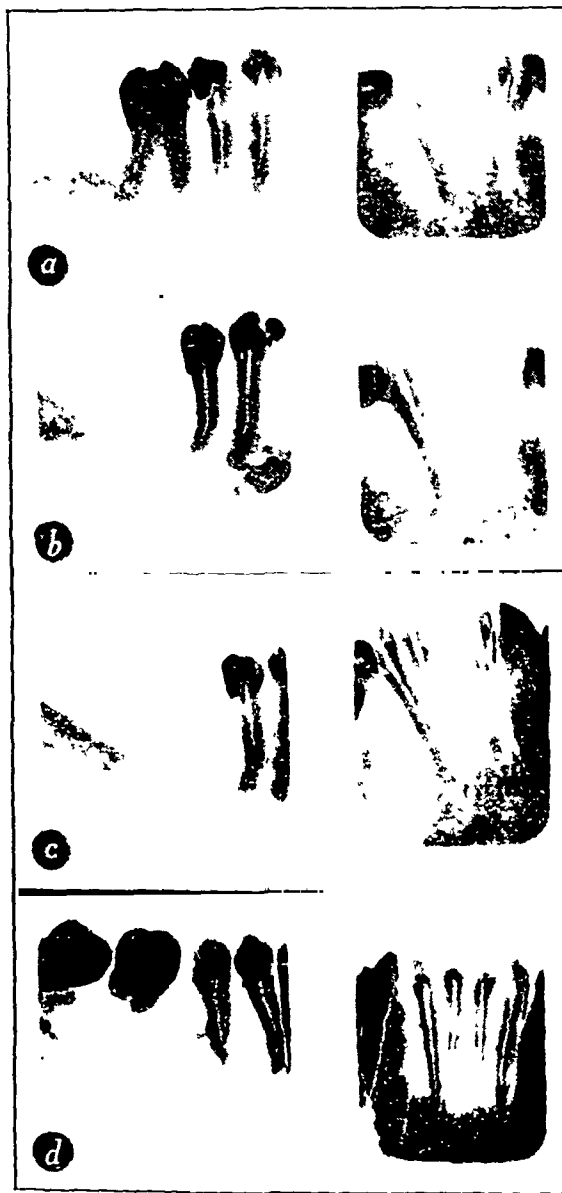


Fig. 7.—Dental roentgenograms in hyperparathyroidism: a, appearance of the mandible in 1939, one year before the first symptoms of hyperparathyroidism appeared; the osseous structure is normal and the lamina dura intact. b, the same case (case 33) in 1944 prior to removal of a parathyroid adenoma; at this time typical generalized skeletal involvement was present; the mandible shows generalized demineralization, distortion of the bony architecture and disappearance of the lamina dura. c, the same area in 1945, six months after removal of the parathyroid adenoma; the bone still shows abnormal structure but there has been visible recalcification and the lamina dura is reappearing. d, an example of more extensive dental changes encountered in another case; in addition to the changes described previously there is disappearance of the roots of the molar teeth as the result of encroachment of a cyst-like tumor in the mandible.

25. Borg, J. F.: Hyperparathyroidism: A New Consideration for the Dentist. *J. Am. Dent. A.* 22: 1683-1692 (Oct.) 1935.

26. Stafne, E. C., and Austin, L. T.: A Study of Dental Roentgenograms in Cases of Paget's Disease (Osteitis Deformans), Osteitis Fibrosa Cystica and Osteoma. *J. Am. Dent. A.* 25: 1202-1214 (Aug.) 1938.

27. Strock, M. S.: The Mouth in Hyperparathyroidism. *New England J. Med.* 224: 1019-1023 (June 12) 1941.

other 2 there was no definite evidence of stones and no history referable to the urinary tract. It is presumed that these cases represent nephrocalcinosis, which

Albright and his associates¹⁸ have shown to be capable of producing serious and at times irreversible renal insufficiency. Demonstrable urinary insufficiency, as evidenced by an elevated level of urea in the blood, occurred in 2 of the 4 cases. Severe renal insufficiency was encountered in another patient without visible calcification of the kidneys (patient 15); the urea clearance was 12 cc. per minute. The remarkably low excretion of calcium (40 mg. in twenty-four hours) and relatively normal blood values (calcium 10.8 mg., phosphorus 2.8 mg.) may perhaps be attributed to the impaired renal function, since by any other standard the parathyroid disease was most severe.

Albright and his associates¹⁸ have emphasized that serious renal damage, resulting from nephrocalcinosis, secondary pyelonephritis or obstruction by stones, is the most important change produced by hyperparathyroidism and the most pressing reason for early diagnosis and treatment. Well authenticated cases have been

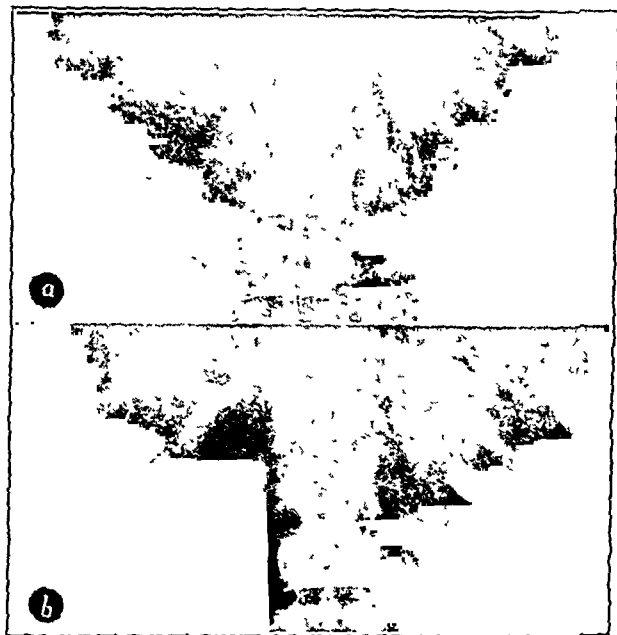


Fig. 8—Appearance of the renal calculi in a patient with hyperparathyroidism without bone disease. The roentgenograms, made five months apart, show the rapidity with which the calculi enlarged in this instance.

reported in which the urinary insufficiency resulting from hyperparathyroidism was the cause of death, and there is reason to believe that the renal damage may lead to a fatal issue either directly²⁸ or indirectly²⁹ even after excision of the hyperfunctioning parathyroid lesion and correction of the metabolic disorder.

ANATOMIC DIAGNOSIS

Proof of the existence of hyperparathyroidism in a patient having clinical or chemical criteria of the disease depends on the anatomic demonstration by the surgeon of an adenoma or hypertrophy of parathyroid tissue. In all 24 cases in this series a parathyroid tumor was found at operation. In case 23 two tumors were found. No instance of primary hypertrophy of all parathyroid tissue³⁰ has been encountered in our series.

In all cases the tumor was situated in the neck, although in only 3 was it definitely palpable before operation. During the period during which these patients were observed, exploration was performed on 6 other patients for a hyperfunctioning parathyroid lesion without a tumor being found. In 2 cases both cervical and mediastinal explorations were carried out despite strong suspicions that secondary hyperparathyroidism was present. In 1 of these parathyroid biopsy showed secondary hyperplasia, and despite the absence of pathologic proof we suspect that a similar condition may have been present in the other. In another 2 cases evidence of hyperparathyroidism was clecut, and despite the lack of surgical findings it is felt that the diagnosis may be still correct. In these cases it is thought likely that a tumor might be located in the mediastinum, but in neither case has mediastinal exploration thus far been undertaken. In the remaining 2 cases exploration was undertaken because of severe and prolonged nephrolithiasis and minimal chemical changes in the blood and urine. The failure to find parathyroid tumors plus the inconclusive character of the chemical evidence leaves considerable doubt regarding the diagnosis of hyperparathyroidism.

None of the tumors removed in our series were located in the mediastinum. It is possible that a mediastinal lesion is present in the 2 patients mentioned previously. In addition, the persistence of signs and symptoms of hyperparathyroidism in 1 of the patients from whom one tumor was removed is taken as suggesting that an undiscovered mediastinal tumor may also have been present. There has not thus far been an opportunity to confirm or disprove this supposition in these 3 cases by mediastinal exploration. In Cope's large experience³¹ mediastinal lesions have been encountered in 20 per cent of patients having hyperparathyroidism. We have no ready explanation for the apparent infrequency of mediastinal lesions in our material.

Histologically the tumors examined contained all of the types of cells common to the normal parathyroid gland, although one or another of these usually predominated. No evidence of extension, invasion or distant metastasis was observed. Disagreement exists as to the histologic classification of these growths.³² Hyperfunctioning parathyroid tumors which show unequivocal clinical evidences of malignancy do occur but are exceedingly rare. Alexander and his associates⁹ discussed cellular changes, which, in their opinion, warranted a diagnosis of adenocarcinoma in 13 of the 14 cases of parathyroid tumor in their series. Castleman and Mallory³³ have observed similar cellular changes but do not consider them to be sufficient evidence on which to make a diagnosis of carcinoma. They classify all the tumors which they have observed as benign adenomas. Irrespective of the different interpretations given to the cellular characteristics of these growths, it is generally agreed that the great majority of them are clinically benign and lack the clinical characteristics usually associated with malignant neoplasms. They rarely recur, invade or metastasize, but there have been a very few isolated instances in which distant

28 Churchill, E. D., and Cope, Oliver. Parathyroid Tumors Associated with Nephrocalcinosis and Hypertension. *Ann. Surg.* 55: 255-271 (1912).

29 H. W., and Bloomberg, Esther. Parathyroid Hypertrophy (Hyperplasia?) of part of 6 Cases. *Arch. Int. Med.* 62: 941 (1912).

31 Cope, Oliver. The Surgery of Subtotal Parathyroidectomy. *New England J. Med.* 213: 470-474 (Sept. 5) 1935; Surgery of Hyperparathyroidism: The Occurrence of Parathyroids in the Anterior Mediastinum and the Division of the Operation into Two Stages. *Ann. Surg.* 114: 706-731 (Oct.) 1941.

32 Case Records of the Massachusetts General Hospital (Cribot Case 31091). *New England J. Med.* 232: 255-256 (March 1) 1945.

33. Castleman, Benjamin, and Mallory, T. B.: The Pathology of the Parathyroid Gland in Hyperparathyroidism: A Study of 25 Cases. *Am. J. Path.* 11: 172 (Jan.) 1935.

metastasis or local recurrences have eventually been observed.³⁴

Following surgical ablation of the parathyroid lesion, the level of calcium in serum falls rapidly to normal in a day or two (fig. 9). The level of inorganic phosphorus returns to normal more gradually. When these changes do not occur, one can suspect that the hyperfunctioning tissue has not been completely removed.

Postoperative Parathyroid Tetany.—Symptoms of tetany sufficiently noticeable to require treatment occurred in 4 of the cases of classic bone disease. In only 1 was the tetany severe; in the remaining 3 it was so mild that treatment with small quantities of calcium by mouth promptly controlled it. Minimal symptoms of tetany (transient tingling, numbness or positive Chvostek's sign) not requiring treatment occurred in 2 other cases of classic bone disease, 2 cases of minimal bone disease and 4 cases without evident bone disease. In the remaining 50 per cent of the cases (1 in group 1, 7 in group 2 and 4 in group 3) there were no symptoms of tetany whatever.

The only instance of severe and intractable tetany occurred in the patient with the most obvious osseous disease and the highest levels of alkaline phosphatase. Albright¹⁵ stated that he has encountered this dangerous complication only in such patients, usually persons in whom the level of alkaline phosphatase before operation exceeded 20 Bodansky units.

The mild or minimal degrees of tetany which sometimes occur transiently for a few days after operation may reflect a temporary state of hypoparathyroidism (relative or absolute) resulting from the functional atrophy or hypoplasia of the remaining parathyroid tissue. On the other hand, such symptoms may represent the reaction of the body to a sudden shift of the equilibrium of calcium and phosphorus to which it had previously been adjusted.

The severe and intractable tetany encountered in cases of severe bone disease appears to be of quite a different character. In these cases the skeleton is the site of intensive osteoblastic activity as well as demineralization. Albright suggested that extirpation of the parathyroid lesion brings to a halt the release of calcium from bone but does not immediately affect the intensive osteoblastic activity. This persistent attempt at repair of bone appears to create a situation in which the hungry bones seize on all the calcium available with such avidity that disastrous tetany results.

COMMENT

To an unparalleled degree the diagnosis of hyperparathyroidism requires that a special search be made for the condition. The early symptoms are notoriously vague and seldom pathognomonic, and in many cases without evident bone disease there may be no symptoms aside from those produced by renal calculi. In other words, until the disease manifests itself by something fairly spectacular, such as renal colic, there is little likelihood that it will be recognized early.³⁵ When the chemical abnormalities in the blood and urine are conspicuous, the diagnosis, once suspected, can be established with ease. In many cases, however, the chemical

changes are minimal and their significance cannot be ascertained without repeated analysis of the blood and urine and prolonged observation of the patient. Conversely, in many suspects who do not have the disease we have found it difficult to rule out hyperparathyroidism except by prolonged study.

Barney and Mintz³⁶ stated in 1936 that hyperparathyroidism was the etiologic factor in 4 to 5 per cent of the cases of renal calculus which they observed. In 1938 Griffin, Osterberg and Braasch,³⁷ from the routine analysis of serum calcium and phosphorus in cases of renal calculi, came to the conclusion that the incidence of hyperparathyroidism in such cases was less than 0.2 per cent. Subsequent experience indicates that this figure is too low. In retrospect it is now apparent that, using the criteria then employed (namely single determinations of calcium and phosphorus and too broad a conception of "normal" values), many cases of hyperparathyroidism would have been overlooked.

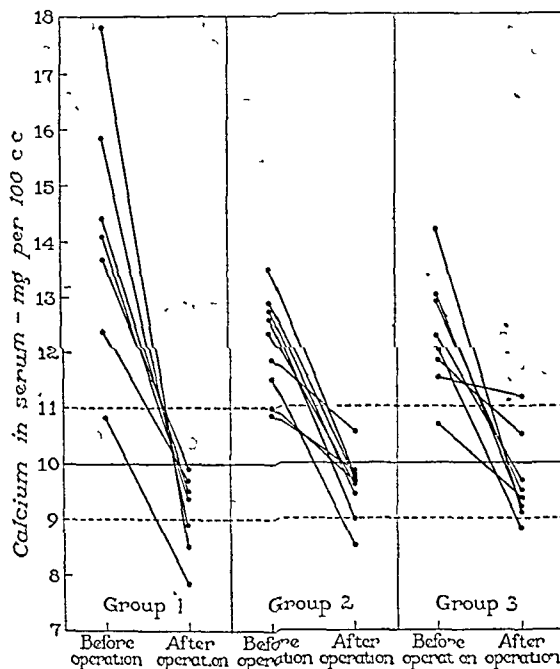


Fig. 9—The changes in the average level of calcium in serum before and after removal of a parathyroid tumor. Each point represents the average of numerous determinations made, in most instances, over a period of several weeks. In 1 case (case 19) in group 3 no significant change in serum calcium occurred following operation. The level of inorganic phosphorus and excretion of calcium were also unchanged, and this has been assumed to indicate that a second tumor is probably present.

Cope has stated that between 10 and 15 per cent of the patients with renal calculi investigated personally by himself or by Albright are eventually proved to have hyperparathyroidism as the cause. No definite conclusion can be drawn from our data as to what proportion of the renal calculi seen at the clinic are the result of hyperparathyroidism. The cases in this report represent an incidence of hyperparathyroidism in approximately 2 per cent of the patients seen with renal calculi during the same period.³⁵ The incidence would have been higher had all patients with renal calculi been investigated thoroughly during the period covered by this report. Regardless of what figure is eventually deter-

³⁴ Gentile, R. J.; Skinner, H. L., and Ashburn, L. L. The Parathyroid Glands: Malignant Tumor with Osteitis Fibrosa Cystica. *Surgery* 10: 793-810 (Nov.) 1941. Meyer, K. A., and Ragins, A. B.: Carcinoma of the Parathyroid Gland, *ibid.* 14: 282-295 (Aug.) 1943.

³⁵ Albright, J. H. has discussed the interesting possibility that hyperparathyroidism might be encountered in the absence either of skeletal involvement or of renal calculi. We have recently observed such a case, in which hypercalcemia, hypophosphatemia and hypercalciuria were discovered quite by accident. After prolonged observation, a parathyroid tumor was removed. There were no symptoms or signs whatever which could be attributed to the hyperparathyroidism.

³⁶ Barney, J. D., and Mintz, F. R.: The Relation of the Parathyroid Glands to Urinary Lithiasis, *J. Urol.* 36: 159-167 (Aug.) 1936.

³⁷ Griffin, Miles, Osterberg, A. E., and Braasch, W. I.: Blood Calcium, Phosphorus and Phosphatase in Urinary Lithiasis: Parathyroid Disease as an Etiologic Factor, *J. A. M. A.* 111: 683-685 (Aug. 20) 1938.

N., and Keating, I. R., Jr.: Unpublished data.

mined, it is apparent that hyperparathyroidism is an important and often neglected consideration in the management of patients with renal calculi. On the other hand, renal calculi have many causes and it is obvious that for every case of renal calculi found after careful study to be a consequence of hyperparathyroidism there will be many others in which this diagnosis can be excluded.

In approximately 10 per cent of all cases of renal calculi recurrent or multiple calculi eventually develop. It is reasonable to suppose that hyperparathyroidism may prove to be a factor of considerable importance in this group of cases. A persistent search for parathyroid disease will materially simplify the management of some patients seen with this difficult and serious problem.

Aside from its clinical importance, hyperparathyroidism without evident bone disease provokes speculation as to the relation of the parathyroid hormone to bone metabolism. Irrespective of other considerations it is evident that whether or not in a case of hyperparathyroidism a visibly demineralized skeleton develops depends on the calcium balance. One might suppose that a negative balance of significant degree would be most likely to occur in hyperparathyroidism of long standing. A comparison of the duration of symptoms in the various groups (fig. 1) throws strong doubt on the concept that patients without osteitis fibrosa cystica do not have classic bone disease because they have not been ill long enough.

Other factors being equal, the calcium balance would be most likely to be negative in patients with the greatest excess of parathyroid hormone. If the average level of serum calcium can be taken as a rough index of the severity of hyperparathyroidism, our observations would suggest (fig. 2) that hyperparathyroidism is more severe in the cases in which there is classic bone disease. Comparison of the measured calcium output (fig. 3) is a little suggestive that more calcium is lost in the urine in these cases as a group. These observations are in agreement with Albright's experience, although he has observed a number of instances in which hyperparathyroidism without bone disease was, by all standards, just as severe as examples of the classic type.

The quantity of calcium in the diet also affects the probable calcium balance. Persons with a high level of calcium in the diet (for example, milk drinkers) are less likely to have a negative calcium balance in the presence of hyperparathyroidism than persons whose intake of calcium is low. Albright has felt that this factor accounted for the absence of bone disease in his patients. However, we have seen a number of such patients whose previous diet contained calcium in relatively small quantities. The existence of a relatively intact skeleton in those patients implies calcium equilibrium in the presence of sustained hypercalcinuria, despite small quantities of ingested calcium. In these instances calcium equilibrium may be aided by more efficient absorption of calcium from the gastrointestinal tract. Whether such increased efficiency of absorption is fortuitous or related to the parathyroid disease would be interesting to discover.

SUMMARY

Twenty-four cases of hyperparathyroidism have been observed at the Mayo Clinic in a period of less than two and a half years. In the preceding fourteen years only 14 cases were encountered. The increased incidence is entirely a reflection of a higher index of suspicion and revision of the criteria necessary to make the diagnosis.

In 7 of these cases there was classic osteitis fibrosa cystica generalisata. In 9 there was mild or atypical bone disease and in 8 there was no evidence of bone disease whatever. Calcification of the kidneys or renal calculi occurred in 22 of the 24 cases, an incidence of 92 per cent. In 18 cases (75 per cent) symptoms produced by renal calculi were the chief clue to the diagnosis.

The diagnosis depends on the demonstration of an increase of calcium and a reduction of inorganic phosphorus in the serum as well as increased excretion of calcium in the urine. These changes may be slight, and prolonged study is frequently required to establish their significance.

On the basis of these data we wish to reemphasize the conclusions of Albright and his colleagues that (1) hyperparathyroidism is more common than generally supposed, (2) renal involvement is more frequent and diagnostically more important than osseous involvement and (3) every patient who has renal calculi should be suspected of having hyperparathyroidism until the contrary is clearly proved or until some other etiologic factor clearly can be demonstrated.

RELAPSING FEVER

REPORT OF A SPORADIC OUTBREAK, INCLUDING
TREATMENT WITH PENICILLIN

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AND

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Relapsing fever in the United States is a sporadic disease, and seldom does the opportunity present itself to study the clinical manifestations and therapeutic problems which arise in a significant number of cases. During August and September 1944 and April and May 1945, 11 proved cases of relapsing fever were observed and treated at an army hospital in Texas. These 11 cases demonstrated several interesting and important features from a diagnostic and therapeutic standpoint. Among these features to be discussed in detail are (1) the difficulties in diagnosis, (2) the high incidence of neurologic involvement and (3) the ineffectiveness of the accepted treatment in contrast to the striking response obtained with newer methods of therapy.

GENERAL CLINICAL PICTURE

Six patients entered the hospital with an admission diagnosis of "nasopharyngitis"; 3 had diagnoses of "hyperpyrexia," "recurrent malaria" and "headache and nausea." 1 entered the surgical service with cellulitis of his left index finger and developed his first febrile episode while undergoing treatment of the cellulitis and 1 entered with scarlet fever and developed an attack of relapsing fever while acutely ill with the former disease.

All the patients, except the final one whose presenting symptoms were those of scarlet fever, gave a history of a sudden onset of illness with weakness, vertigo, fever, headache and backache on the day prior to admission. Six had nausea and 4 vomited. On admission all appeared to be acutely ill, with extreme prostration. They complained bitterly of violent frontal headache, fever, backache and muscular weakness. Physical examination revealed a flushed face, mildly injected pharynx, temperature 104-105 F., pulse rate 120-130 per minute and respiratory rate 20-24 per minute. Three patients

had abdominal tenderness, periumbilical and in the right and left lower quadrant and 3 had abnormal neurologic signs consisting of nuchal rigidity, a positive Kernig's sign and absent abdominal reflexes. Blood counts varied from normal to an initial leukocytosis of 17,000 with a concomitant increase in polymorphonuclear leukocytes. Urinalyses were essentially negative. In no case were the abnormalities found on physical examination or preliminary laboratory work commensurate with the severity of the clinical picture.

Three or four days after the onset of symptoms the fever, headache, tachycardia and backache suddenly disappeared and the patients felt well. At the end of the first febrile episode, 7 of the 11 patients had a palpable spleen. On the second or third day after the temperature returned to normal, 5 of the patients developed a well defined skin eruption.

From the termination of the first febrile episode, the patients were asymptomatic for six to eight days. They then began to complain of headache, backache, weakness and drowsiness and within a few hours they had high fever, prostration and a clinical picture identical with that on admission. This second episode ran essentially the same course as the first, with the exception that the signs lasted twenty-four to forty-eight hours while the symptoms persisted for a variable number of days. The patients continued to complain of backache, headache and weakness, although physical examination at this time revealed no abnormalities. In 10 of the cases the first two febrile episodes were similar. In the final case, in which both scarlet fever and relapsing fever were present, no second episode occurred. Thereafter the course of the disease varied somewhat, being modified apparently by treatment. The later stages of the disease will be described when the treatment is discussed.

Prominent in the general clinical picture was the prolonged course and long convalescence of the patients treated with oxophenarsine hydrochloride (mapharsen). No patient was hospitalized for less than one month. The longest period was one hundred and ten days. This patient developed mumps during his convalescence, which increased his hospital stay somewhat. Most of the patients were in the hospital or convalescent training program for fifty to sixty days. The reason for the long hospitalization was chiefly the profound asthenia, which persisted long after all real symptoms and signs of the disease had disappeared. During convalescence, patients were mentally depressed, felt weak, had frequent headaches and backaches and felt that they were not well enough for duty.

In a number of the individual cases there appeared some specific clinical manifestations which will be discussed here.

On the second or third day following the termination of the first febrile episode, 5 of the patients developed a skin eruption. This consisted of dime (18 mm.) to quarter (24 mm.) sized rose red spots which appeared on the trunk, legs and arms. These lesions were circular, were sharply demarcated, blanched on pressure and were not elevated above the surrounding skin. They had the appearance of an erythema multiforme and persisted for twenty-four to forty-eight hours.

Significant neurologic manifestations appeared in 5 of the patients. Headache, backache, nuchal rigidity, absent abdominal reflexes and fever were so prominent as to suggest a diagnosis of meningitis. Spinal fluid examination on these patients did not substantiate this suspected diagnosis. In several patients signs of menin-

geal irritation appeared during more than one of the recurrent attacks. Not only was there evidence of neurologic disease early, but in 5 of the patients an important neurologic complication of relapsing fever presented itself during the later stages of the disease. This consisted of paralysis of the seventh cranial nerve, occurring after the second or third relapse. It appeared approximately forty-eight hours after the termination of the febrile episode. Two of the patients had a right facial palsy, 2 a left facial palsy and 1 a bilateral facial palsy.

DIAGNOSIS AND LABORATORY FINDINGS

The diagnosis of the disease in the initial or sporadic case is difficult. It can be established only by finding the causative organism, which was in these cases the spirochete *Borrelia recurrentis*. The spirochete may be found by dark field examination or stained smear of the patient's peripheral blood. In these cases the spirochete was found in the peripheral blood only during the febrile episode with the patient's temperature above 102 F. In all patients the spirochete was found both on dark field examination and by examination of thick and thin smears stained with Wright's stain.

On 1 patient a biopsy of one of the skin lesions was performed and sections stained by Levaditi's method revealed the causative spirochetes in the superficial layers of the dermis. It is interesting to note that these spirochetes were found in the skin during an afebrile period of the disease. In no other case were spirochetes demonstrated anywhere during an afebrile period.

In addition, various other laboratory studies were done. In no case was the spirochete found in the urine or spinal fluid either by direct examination or by mouse inoculation. Blood cultures were negative. Agglutinations with proteus OX19 (Weil-Felix reaction) were negative. Blood and spinal fluid Wassermann and Kahn reactions were negative.

Blood counts are in no way specific, and in these patients the initial white blood count ranged from 5,850 with 65 per cent polymorphonuclears to 17,000 with 74 per cent polymorphonuclears. Five of the 11 patients had on admission white blood counts below 10,000; with normal differentials.

Sedimentation rates were determined in 4 cases, and in all were rapid. Rates ranged from 18 to 40 mm. per hour and quickly returned to normal with subsidence of the disease.

Six patients showed a 1 plus albuminuria with a few red and white cells. Repeat urinalyses were essentially negative.

Lumbar punctures were accomplished in 5 patients. In 2 the spinal fluid was normal, and neither of these patients developed any neurologic complication. The remaining 3 cases presented spinal fluids with abnormally high protein values, 120 and 60 and 56 mg. per hundred cubic centimeters respectively. These 3 patients, together with 2 others on whom no lumbar puncture was done, developed seventh nerve palsies, suggesting that there may be some correlation between the presence of abnormal amounts of protein in the spinal fluid and subsequent neurologic involvement.

TREATMENT

The treatment described for relapsing fever is the intravenous injection of an arsenical preparation given most effectively before the fastigium of a febrile episode is reached. According to most of the available literature, such treatment supposedly terminates the attack and

prevents additional relapses. Occasionally the arsenical has needed reinforcement by intramuscular bismuth, but in these cases supposedly adequate treatment was neither so simple nor so effective.

Seven of the patients received 0.04 Gm. of oxophenarsine hydrochloride intravenously at the beginning of a relapse, before the temperature had reached its expected peak. In all 7 cases the results were spectacular. The patient immediately had a chill, accompanied by extreme malaise, apprehension, nausea, vomiting and temperature rise to 104 to 105 F. The symptoms and signs did disappear about eight hours following the administration of the arsenical, thereby shortening the relapse. Although this single dose of oxophenarsine hydrochloride shortened the acute episode, it did not ordinarily prevent subsequent ones. After the first two relapses the periods of time between them began to vary, each occurring from seven to fourteen days after the preceding one. They also began to vary in intensity. In most cases after the third relapse the subsequent ones showed less febrile reaction, but the complaints of headache, backache and weakness were as severe as during the first few episodes. Eventually many of the patients had what appeared to be "symptomatic" relapses. These were periods of time lasting twenty-four to forty-eight hours during which patients had severe headache, backache and weakness but had normal temperature, pulse and respirations. These symptoms occurred just at the time of the expected relapse. During these symptomatic relapses several had spasm of the muscles of the lower part of the back.

After the patients had had several single doses of oxophenarsine hydrochloride and still continued to relapse, it was decided to give a course of arsenic and bismuth therapy. Five of the patients received this. It consisted of oxophenarsine hydrochloride 0.04 Gm. intravenously twice weekly and bismuth subsalicylate intramuscularly once weekly for three weeks. After this course was begun none of the patients had febrile reactions, but all had one or more symptomatic relapses. None had recovered from the disease when this course was finished.

In 1 case an injection of oxophenarsine hydrochloride during each of the first two febrile episodes terminated the disease. In another case a single injection of oxophenarsine hydrochloride during the third relapse cured the patient. The first two febrile episodes in this patient had been undiagnosed. In a third case oxophenarsine hydrochloride was given during the first relapse, three days later, and during the second relapse. Following these three injections the patient gradually improved but required three weeks to become symptom free. The remainder of the arsenic treated patients did not respond as well as this and continued to relapse. Since oxophenarsine hydrochloride, even in combination with bismuth, proved to be inadequate in controlling the disease and its debilitating effect, penicillin was tried on the last patient in the 1944 series. On Oct. 2, 1944 this patient received 20,000 units every three hours intramuscularly for a total dosage of 100,000 units. The penicillin was given during a relapse. This amount had no apparent effect on this relapse nor did it prevent subsequent ones. This patient had a total of six relapses, each of diminishing intensity after the first three, which were identical. It was felt at the time that this was a small dose of penicillin, but a larger amount of the drug was not immediately available. Although this penicillin treatment was a failure, it was still thought that adequate dosage with penicillin would

prove effective. Accordingly when the last 2 patients of this series were encountered, penicillin was again used. These last 2 patients appeared in April and May 1945 and each received 40,000 units of penicillin intramuscularly every three hours for sixty doses, making a total dosage of 2,400,000 units. The immediate response to the first two injections of penicillin was a sudden increase in fever and malaise and a feeling of apprehension. This appeared to be a Herxheimer reaction, possibly due to the sudden destruction of large numbers of spirochetes. Both patients were afebrile within seventy-two hours after starting penicillin, and neither developed febrile or symptomatic relapses thereafter. All signs of the disease rapidly disappeared during the therapy. The splenomegaly quickly regressed, and the patients had recovered within two weeks after the penicillin therapy was completed.

The last patient treated had scarlet fever concomitantly with his relapsing fever. Penicillin in this case not only was curative for his relapsing fever but was apparently beneficial to his scarlet fever. Intravenous arsenicals were probably contraindicated in this patient, and untreated relapsing fever in a patient acutely ill with scarlet fever might well have produced serious consequences.

The remaining points of importance in the therapeutic management are obvious: symptomatic relief of headache, backache and malaise by codeine and acetylsalicylic acid, the maintenance of adequate fluid balance and the full utilization of physical therapy for those patients who developed Bell's palsy. Most of the facial palsies responded to physical therapy within two weeks, but one lasted two months. Recovery was eventually complete in all cases.

EPIDEMIOLOGY

Epidemiologic studies were done after the diagnosis of relapsing fever was made. It was known that the chief carrier of the spirochete of relapsing fever in Texas is the tick. It was not known where to find the infected ticks. Close questioning disclosed that all patients suffering from the disease had, shortly before their admission, been camping at a bivouac area near the army field where the cases appeared. The bivouac area was explored and many ticks of all ages and sizes were found. The ticks were living in the earth around the sides and in the floors of small animal burrows. The ticks were all of one species and were identified as *Ornithodoros turicata*, a tick common in Texas. None of the patients gave a history of tick bite, but all gave a history of sleeping on the ground in one area of the bivouac on the sixth or seventh day prior to the beginning of their illness. In almost all cases it was the sixth day. This offered some information on the incubation period of the disease as well as indicating the area from which the infection came. Eventually ticks infected with the spirochete of relapsing fever were found in that area.

COMMENT

Relapsing fever in this country in general is not an important disease except to the individual who contracts the infection. If untreated or inadequately treated, the morbidity is great. The patient faces from two to six or more severe febrile episodes over a period of a month or more and in addition a long period of mental depression, muscular asthenia, headache and backache.

In this group of patients, arsenical treatment was not ideal in combating the Texas strain of relapsing fever. In sharp contrast to this method of treatment, penicillin in large doses gives promise of a more satisfactory

therapeutic result. It has in 2 instances produced a rapid subsidence of symptoms and signs, prevented subsequent relapses and eliminated the protracted convalescence characteristic of patients otherwise treated.

The dosage of 2,400,000 units was chosen arbitrarily because of its remarkable success in the treatment of another spirochetal disease—syphilis. Smaller amounts might be sufficient to effect a cure, but the opportunity to test the efficacy of various doses has not yet presented itself.

No serious complications incident to the disease or to the penicillin treatment were encountered.

CONCLUSIONS

Consideration of these 11 cases of relapsing fever suggests the following conclusions:

1. Penicillin in a dosage of 2,400,000 Oxford units is effective in the treatment of the disease.
2. Penicillin reduces the length of disability from the disease to a minimum.
3. Arsenicals, with or without bismuth, produced disappointing therapeutic results.
4. Spirochetes may be demonstrated in the skin during an afebrile period.
5. Neurologic disorders play a prominent role in the natural history of the disease.

THE TREATMENT OF LUNG ABSCESSSES WITH PENICILLIN

REPORT OF FOUR CASES

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Despite recent advances in chemical and surgical therapy, the treatment of lung abscesses remains an important problem. The sulfonamides, pneumothorax, phrenic nerve avulsion, bronchoscopy and postural drainage have all proved to be of definite, but limited, value. The surgical treatment of lung abscesses, particularly the chronic type, still is attended by a high fatality rate. The sulfonamides have not proved to be effective except in the control of the associated pneumonitis. In the relatively short time since penicillin has been available, a few lung abscesses have been treated with this new drug. The response in some of these cases has been excellent. Recently 4 patients suffering from lung abscesses have been treated in the Wayne County General Hospital, Eloise, Mich., with penicillin. Our purpose in this communication is to review the previously reported cases of lung abscesses treated with penicillin and to present the cases which we have observed during the past twenty months.

In a review of the literature we have found reference to 31 cases of lung abscesses which have been treated with penicillin. Thirteen were cured, 8 improved and 10 were not benefited. The accompanying table summarizes these cases and includes most of the pertinent data presented in each case in the original report.

We have been encouraged by the satisfactory recovery of 4 patients with lung abscesses whom we have treated with the long-continued intramuscular administration of penicillin. Two of the patients had acute pulmonary

infection with cavitation, 1 developed a lung abscess following an embolus from thrombophlebitis of the leg and the other patient had chronic lung abscesses.

The treatment in each of these cases has consisted of penicillin given every three hours day and night. The site of the injections has been the deltoid and gluteal muscle groups and the individual injections were made using these sites in rotation. The following is a summary of these cases:

REPORT OF CASES

CASE 1.—History.—M. J., a white man aged 39, a barber, was admitted to the hospital on March 27, 1945 with a cough and weakness for about three weeks. For a few days he had had symptoms which he thought were due to a "head cold." He had noticed generalized aches and pains and at times he felt feverish. At one time he recorded his temperature at 103 F. The cough became increasingly productive and the day prior to admission he coughed up a half cup of dark brown sputum. Since the onset of symptoms he had had no appetite and had lost 15 pounds (6.8 Kg.) in weight.

Physical Examination.—On admission the temperature was 101 F., the respiratory rate 24 per minute and the pulse rate 108 per minute. The patient was pale but did not appear acutely ill. There was increased tactile fremitus and impaired resonance over the right upper lobe posteriorly, associated with inconstant crepitant rales. The breath sounds over this area were bronchovesicular in quality. The remainder of the physical examination was essentially negative.

Laboratory Data.—The hemoglobin was 12.0 Gm., the red blood cell count 3,560,000 per cubic millimeter and the white blood cell count was 13,150 per cubic millimeter. The sputum was negative for acid fast bacilli on four examinations, and when cultured it exhibited a predominance of *Streptococcus viridans*, hemolytic streptococci and some micrococci. A sputum specimen obtained at the time of bronchoscopy was cultured and *Neisseria catarrhalis* and *Streptococcus viridans* were recovered.

Roentgenograms.—The roentgenographic changes are illustrated in the sketches in figure 1. A chest roentgenogram taken on March 27, 1945 showed an area of pneumonitis in the right upper lobe within which there was an area of rarefaction 2 cm. across with a fluid level. A subsequent roentgenographic examination of the chest on April 24 revealed minimal residual pneumonitis in the right first interspace in the area where the cavity was originally seen, and a roentgenogram taken on June 5 was interpreted as showing "generalized increase in bronchovascular markings but no evidence of active lung pathologic change." The last roentgenogram, taken on August 2, revealed "no cavity in the right upper lobe."

Hospital Course.—On the first hospital day he was given sulfadiazine by mouth. The initial dose was 2 Gm. and subsequent doses were 1 Gm. every four hours. Postural drainage was initiated on the second hospital day. On the fourth hospital day sulfadiazine was discontinued and penicillin 50,000 units every three hours was given by the intramuscular route and continued at that dose for three days; then the size of each dose was decreased to 15,000 units every three hours for eleven days. Each individual dose was then raised to 25,000 units and given intramuscularly every three hours for the next fifteen days, and 15,000 units every three hours was given intramuscularly until the time of discharge from the hospital. The total amount of penicillin which he received during this thirty-six day period was 6,300,000 units. The patient's admission weight was 145 pounds (66 Kg.) and increased progressively until the time of discharge, when his weight was 164 pounds (74 Kg.). The temperature, which never rose above 101 F., returned to normal on the fourth hospital day and has remained normal. The amount of sputum on the day following admission was 318 Gm. and decreased progressively thereafter, being 150 Gm. on the sixth hospital day, 100 Gm. on the twelfth hospital day and 10 Gm. on the day he went home. This man is employed at the hospital as a barber, has completely recovered and is working full time.

Summary of Reported Cases of Lung Abscess Treated with Penicillin

Reference	Diagnosis	Age and Sex	Duration of Disease, Days	Penicillin Dosage, Total Units	Length of Treatment, Days	Comment
Reefer, O. S.; Blake, F. G.; Marshall, E. K., Jr.; Lockwood, J. S., and Wood, W. B., Jr. J.A.M.A. 122:1217 (Aug. 28) 1945	Lung abscess		No data reported			Three cases; no detailed information; 2 showed recovery or improvement, 1 died
Lyons, C. Ibid 123:1007 (Dec. 18) 1945	Lung abscess		No data reported			Four cases; no detailed information; penicillin was without effect on 2 patients with "putrid" lung abscess; 2 pyogenic streptococcus lung abscesses were healed
Dawson, M. H., and Hobby, G. L., Ibid 124:612 (March 4) 1944	Carbuncle, lung abscess, pleural effusion, staphylococcus with bacteremia	33	..	1,800,000	9	A remarkable recovery in a desperately ill patient, carbuncle drained surgically ***
	Multiple lung abscesses, staphylococcus with bacteremia	2½ mo	..	602,000	32	Infant with cystic fibrosis of pancreas; infection later recurred and patient succumbed *
	Lung abscess, mixed infection	8 mo	..	240,000	15	Infant with cystic fibrosis of pancreas, blood culture positive for both hemolytic streptococcus and Staphylococcus aureus, remarkable response, but infection recurred and infant died *
	Lung abscess, with metastatic brain abscess, mixed infection	40	..	4,050,000	50	Lung abscess cleared, patient ultimately succumbed to brain abscess *
Bloomfield, A. L.; Kirby, W. M., and Armstrong, C. D., Ibid. 126:685 (Nov. 11) 1944	Lung abscess following aspiration of potato chip, mixed infection	..	28	900,000	3	Desperately ill patient with progressive gangrene of lung, contents of abscess obtained at autopsy showed no growth on culture *
Herrell, W. E., and Kennedy, R. C. G.; J. Pediat 25:567 (Dec.) 1944	Lung abscess, mixed infection	..	..	400,000 900,000	10 24	Two cases no detailed information; recovery occurred in both cases *** **
Roberts, J. F. H.; Tubbs, O. S., and Bates, M. Lancet 1:39 (Jan. 13) 1945	Lung and brain abscess, nonhemolytic streptococcus	..	..	1,680,000	14	Patient died, nonhemolytic streptococci found in frontal lobe abscess at autopsy *
	Lung abscess, mixed infection	37 ♀	14	1,170,000	19	Complete recovery ***
	Lung abscess, post-operative hemolytic streptococci	51 ♂	..	1,380,000	14	Progressive decrease in size of 2.5 cm cavity during 2 month period of x-ray observation **
	Lung abscess, mixed infection	31 ♂	35	900,000	12	After penicillin was stopped fever continued for 2 weeks; then patient made a complete recovery ***
Harford, C. G.; Martin, S. P.; Lingman, P. O., and Wood, W. B., Jr.; J. A. M. A. 124:613 (March 4) 1944	Lung abscess, empyema, brain abscess, an aerobic streptococcus	52 ♂	92	3,455,000	38	Patient died; lesion chronic; well localized, comatose on entry *
	Lung abscess, post-operative (hemolytic staphylococcus)	48 ♀	20	3,032,000	19	Prompt clearing of pulmonary infiltration ***
Craig, W. M.; Thompson, G. J.; Hutter, A. M.; Barksdale, E. E., and Pfeiffer, C. O.; U. S. Nav. M. Bull. 44:453 (March) 1945	.....		No data reported			Four cases in weeks; 2 cases penicillin, 2
Barach, A. L.; Silberstein, F. H.; Oppenheimer, I. T.; Hunter, T., and Soroka, M.; Ann. Int. Med. 22:485 (April) 1945	Lung abscess, rheumatic heart disease, pulmonary infarction	35 ♀	49	1,600,000	8	Treated one month with intramuscular penicillin, 100,000 units daily; no improvement until penicillin "aerosol" was given one week; ultimate recovery ***
	Bronchiectasis, lung abscess, pulmonary fibrosis	41 ♂	15 yrs	....	7	Only little improvement, increase in vital capacity; no change in roentgenograms **
	Bronchiectasis, lung abscess	24 ♂	10 yrs	6,000,000	50	No clinical improvement; lobectomy was subsequently performed, with recovery **
	Bronchiectasis, lung abscess	29 ♀	23 yrs	5,150,000	33	Not significantly benefited *
	Lung abscess, acute	65 ♂	35	2,800,000	10	Penicillin by inhalation produced clinical improvement; there was no change by x-ray, surgical drainage, with recovery **
Freyhan, F. A.; Delanare M. J. 16:177 (Nov.) 1944	Lung abscess	60 ♀	30	1,000,000	10	Response was favorable, one month later x-ray examination revealed complete clearing of the lung field ***
Snook, R. R.; J. Kansas M. Soc. 46:40 (Feb.) 1945	Lung abscess, acute 2 weeks after tonsillectomy	17 ♀	2	600,000	6	Complete recovery ***

* No improvement or death

** Satisfactory improvement

*** Complete recovery

This man had an acute pulmonary abscess for which he received 6,300,000 units of penicillin by the intramuscular route, beginning relatively early following the onset of his pulmonary symptoms. He never appeared to be particularly ill, and the lesion, which was diagnosed early, showed progressive diminution in size and

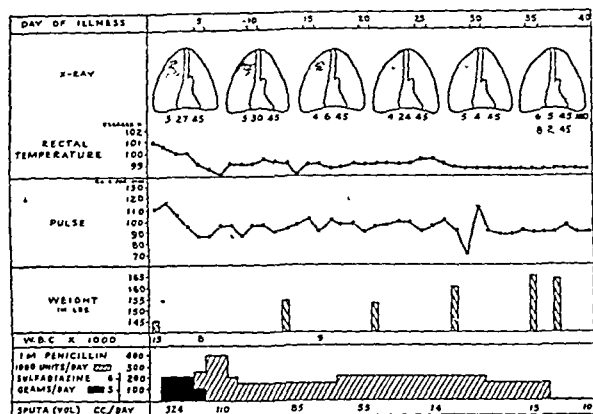


Fig. 1 (case 1).—Clinical course in a patient with an acute lung abscess who was treated with penicillin. Note that sketches of the roentgenograms do not correspond to the day of the illness.

was absent by the end of the fourth week of treatment. It has now been three months since his discharge from the hospital, and there has been no evidence of recurrence of the abscess. It is impossible to say that this lesion would not have regressed spontaneously; however, considering the size of the lesion and the rapidity with which it developed, it seems to us unlikely that complete resolution would have taken place without the use of some chemotherapeutic agent. We believe that penicillin decidedly shortened the clinical course of this patient's illness.

CASE 2.—History.—J. H., a white man aged 45, a mentally deteriorated parietic inmate of the Psychiatric Division of the Eloise Hospital, was admitted to the General Hospital Division of the Wayne County General Hospital on Aug. 16, 1944, at which time no reliable history was obtainable. He had lost con-

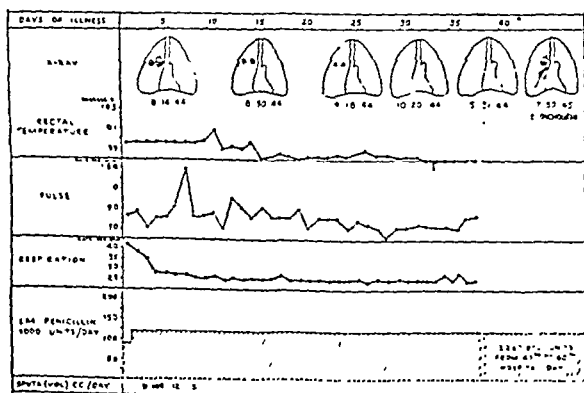


Fig. 2 (case 2).—Clinical course following penicillin therapy in a patient with acute lung abscesses. Note that the illustrations of the roentgenograms and the bronchogram do not correspond to the day of the illness.

siderable weight during the two weeks prior to admission, his temperature had been elevated, and it was noticed that his breath was foul.

Physical Examination.—At the time of admission the temperature was 99.6 F., the pulse rate 88 per minute and the respiratory rate 38 per minute. He was poorly developed and

appeared chronically ill. He coughed frequently and held his hand over his right chest. The sputum which he coughed up was yellow and had a very foul odor. There was increased tactile fremitus, with dullness over the entire right hemithorax and coarse rales over the right middle lobe.

Laboratory Data.—The blood count on the first hospital day was hemoglobin 11 Gm., red blood cells 3,670,000 per cubic millimeter and white blood cells 23,300 per cubic millimeter. Sputum studies revealed *Streptococcus viridans*, *Neisseria catarrhalis* and *Staphylococcus aureus*, but no acid fast bacilli were found.

Roentgenograms (fig. 2).—On August 14 roentgenograms of the chest revealed the presence of two cavities in the right midlung field, each of which had a fluid level; the largest measured 4.5 cm. across. There was a small area of pneumonitis about each of these cavities. Lateral view of the chest showed the abscesses to be in the posterior portion of the chest in the apex of the right lower lobe. Another roentgenographic examination on October 20 revealed evidence of

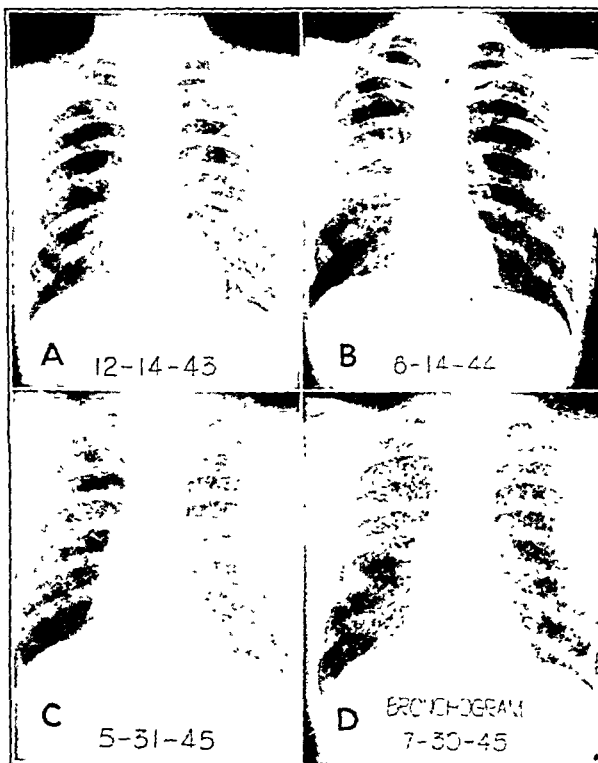


Fig. 3 (case 2).—Changes that occurred after penicillin therapy in a patient aged 45 with acute lung abscesses: A, appearance at time of admission to the Psychiatric Hospital. B, two abscesses in superior division of the right lower lobe before penicillin therapy. C, no evidence of abscesses nine months after penicillin therapy. D, bronchogram showing residual cavity, which was not evident on routine roentgenograms.

pleural thickening. The bases of both lungs appeared to be emphysematous, but no cavity could be seen. On May 31, 1945 roentgenograms of the chest were again taken which showed increased lung markings, no areas of infiltration or consolidation and no evidence of lung abscesses. Although the patient had been without evidence of lung disease for nine months, follow-up roentgenographic examinations including bronchograms were done on July 30, 1945. In the upper posterior part of the right lower lobe a smooth walled 3 cm. cavity was clearly demonstrated (fig. 3). There was no evidence of pneumonitis about the cavity. This cavity was situated in the position occupied by the largest of the two lung abscesses. Its presence had not been suspected in the roentgenograms taken nine and four months before.

Hospital Course.—Intramuscular penicillin therapy was begun on the first hospital day. He received 15,000 units every three

hours throughout the thirty-seven days of hospitalization in the General Hospital. During the month following his transfer back to the Psychiatric Division he continued to receive penicillin by the same route of administration and the same total daily dose. Therefore this patient received a total of about 7,700,000 units of penicillin in a period of sixty-seven days. The volume of the sputum decreased progressively; it was 51 Gm. on the third hospital day, 12 Gm. on the sixth hospital day and 5 Gm. on the eighth hospital day. The temperature and pulse remained within normal limits during the entire course of the illness. However, the respiratory rate was elevated during the first three days after admission, then it returned to and remained normal.

When all physical signs of pulmonary disease disappeared and no cavities were reported on roentgenograms taken one and nine months following the use of penicillin, we considered that the multiple abscesses had been obliterated and healed by fibrosis. To obtain objective evidence regarding this point a roentgenographic examination using iodized poppyseed oil was done ten months following the completion of penicillin therapy. The demonstration of a single residual cavity by the contrast medium had not been anticipated and its presence would not have been shown without the bronchograms. This cavity is probably epithelized and because the patient is asymptomatic we do not plan active therapy at the present time.

We believe that the continuous daily administration of penicillin for sixty-seven days was undoubtedly a factor in controlling the pulmonary infection in this case.

CASE 3.—History.—C. B., a man aged 57, an attendant, was admitted on Feb. 12, 1945 with a history of having experienced stabbing pain in the right upper abdominal quadrant penetrating to the back for about three days prior to admission. The pain had extended to the right side of the chest and was made worse by deep inspiration; it was also made worse by the presence of a productive cough. He had been previously examined at this hospital and was known to have had a posterior myocardial infarct, moderate obesity and hypertension.

Physical Examination.—On admission the temperature was 100.6 F., the pulse rate 100 and the respiratory rate 44 per minute. The patient was well developed but obviously dyspneic and, except for dullness over the right upper chest and fine rales at the bases posteriorly, the physical examination was negative.

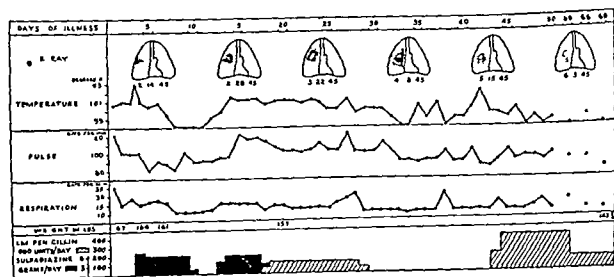


Fig. 4 (case 3).—Clinical course following penicillin therapy in a patient with an acute lung abscess due to an embolus from thrombophlebitis of the leg.

Laboratory Data.—The blood count on February 14 was hemoglobin 13.5 Gm., erythrocytes 4.32 million per cubic millimeter and leukocytes 14,250 per cubic millimeter. On February 13 the sputum showed many type XVII pneumococci. No acid fast bacilli were found on five examinations.

Roentgenograms (fig. 4).—On February 14 roentgenograms of the chest showed peribronchial infiltration in both bases and was interpreted as bronchopneumonia. On March 22 there was an area of pneumonitis in the right midlung field, within which there was an area of rarefaction and lateral view of the chest

showed the cavity at the apex of the right lower lobe with a fluid level. On April 18 roentgenograms showed decrease in both the size of the cavity and the pneumonitis. On June 3 roentgenograms of the chest showed the presence of the cavity with minimal reactions about the cavity. Roentgenographic examinations of the chest, including bronchograms taken on July 27, revealed no evidence of a residual cavity in the apex of the right lower lobe.

Hospital Course.—On February 15 sulfadiazine 4 Gm. was given orally as an initial dose and 1 Gm. every four hours for seven days. During this time the patient continued to

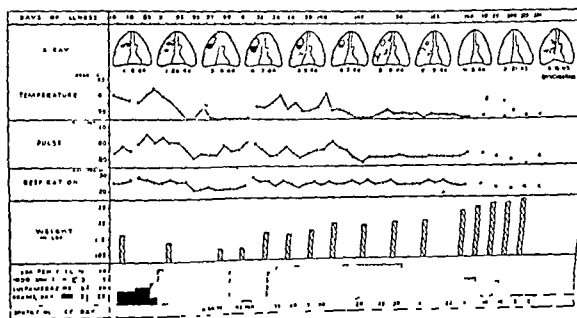


Fig. 5 (case 4).—Clinical course of a patient with multiple chronic lung abscesses treated with penicillin.

experience chest pain on the right side and coughed up old blood. On February 24 sulfadiazine was restarted in the aforementioned dosages. Physical examination at that time revealed dullness with crackling rales at the bases. The sulfadiazine was continued for five days. The low-grade fever, chest pain and dark foul sputum persisted. On March 2 the patient experienced additional pain in the right side of the chest associated with pain in the right calf and venous engorgement. The patient was thought to have had a pulmonary infarct and thrombophlebitis. Penicillin in doses of 15,000 units given every three hours intramuscularly was started on March 2 and continued for eleven days. Thus a total of 1,575,000 units of penicillin was given in this initial course. The right femoral vein was ligated on March 7 and at the time of operation a firm clot could be felt within the femoral vein and a 14 inch clot was aspirated from the vein. On March 22 there was roentgenographic evidence of a lung abscess. Penicillin was again started on March 29 in doses of 50,000 units every three hours by the intramuscular route and continued at this high level for fifteen days. Then on April 15 the penicillin was decreased to 15,000 units every three hours and kept at this dose until discontinued on June 9. The total amount of penicillin administered during the second course was 12,600,000 units; the total for the two courses was 14,175,000 units.

We consider that the results in this case, an acute pulmonary abscess due to an embolus, can be attributed to the long continued use of penicillin. We were unable to demonstrate a residual pulmonary cavity by bronchograms. This procedure was indicated in view of our experience in case 2 and was done two months following the discontinuance of penicillin. The total period of observation has been six months since the lung abscess first developed. The patient is now employed as an attendant in this hospital and is without any evidence of pulmonary disease.

CASE 4.—History.—F. K., a white man aged 57, a laborer, was transferred to the Wayne County General Hospital from the Henry Ford Hospital, Detroit, on Jan. 11, 1944. During the first week in December 1943 he had a severe cold with fever, cough, chest pain and night sweats and had lost 20 pounds (9 Kg.). A report from the Henry Ford Hospital¹ stated that when he was first seen there was dullness over the right upper lobe pos-

1. Personal communication from Dr. F. Janney Smith, Detroit.

teriorly with prolonged expiratory breath sounds. Their laboratory studies showed hemoglobin 13.7 Gm., red blood cells 4,210,000 per cubic millimeter, white blood cells 17,500 per cubic millimeter and in the sputum type IV pneumococci but no acid fast bacilli. In that hospital the patient had a septic type of temperature which was not influenced by accepted therapeutic doses of sulfadiazine. Roentgenograms taken there revealed multiple abscesses of the upper lobe of the right lung. On bronchoscopy pus was seen coming from the right upper lobe bronchus, which was moderately obstructed. A biopsy of the wall of the bronchus showed only inflammatory changes.

Physical Examination.—At the time of admission to the Wayne County General Hospital the patient appeared pale and chronically ill. There was dullness over the right upper lobe, with numerous fine inspiratory rales over the same lobe. His weight was 117 pounds (53 Kg.).

Laboratory Data.—Two days after admission the hemoglobin was 9.5 Gm., red blood cell count 3,400,000 per cubic millimeter and white blood cell count 15,800 per cubic millimeter. Six specimens of sputum were studied for tubercle bacilli by smear and culture with negative results. Bronchoscopy revealed no malignant obstruction, and cultures of secretions from the

examinations on Aug. 13, 1945 this patient had been without roentgenographic evidence of active pulmonary disease for ten months. In view of our experience in case 2, in which a "silent" cavity was demonstrated following the instillation of iodized oil, it was decided to include bronchographic studies on this patient. In the central portion of the right middle and upper portion of the right lower lobes multiple bronchiectatic cavities were shown (fig. 6).

Hospital Course and Therapy (fig. 5).—During the first three months in this hospital the patient's temperature was septic in type, ranging from 99 to 102 F. daily. The pulse and respiratory rates were correspondingly elevated. He experienced chills and profuse diaphoresis and expectorated an average of 120 cc. of foul-smelling mucopurulent sputum each day. His weight, which on the first hospital day was 117 pounds (53 Kg.), decreased to 107 pounds (48.5 Kg.) on the 102d hospital day. Sulfamerazine was started on the 16th hospital day in doses of 4 Gm. daily and continued for seventy-two days without any improvement. From the 89th to the 99th hospital day the patient received 1 million units of penicillin given intramuscularly in doses of 20,000 units every four hours. The temperature decreased abruptly to normal on the second day

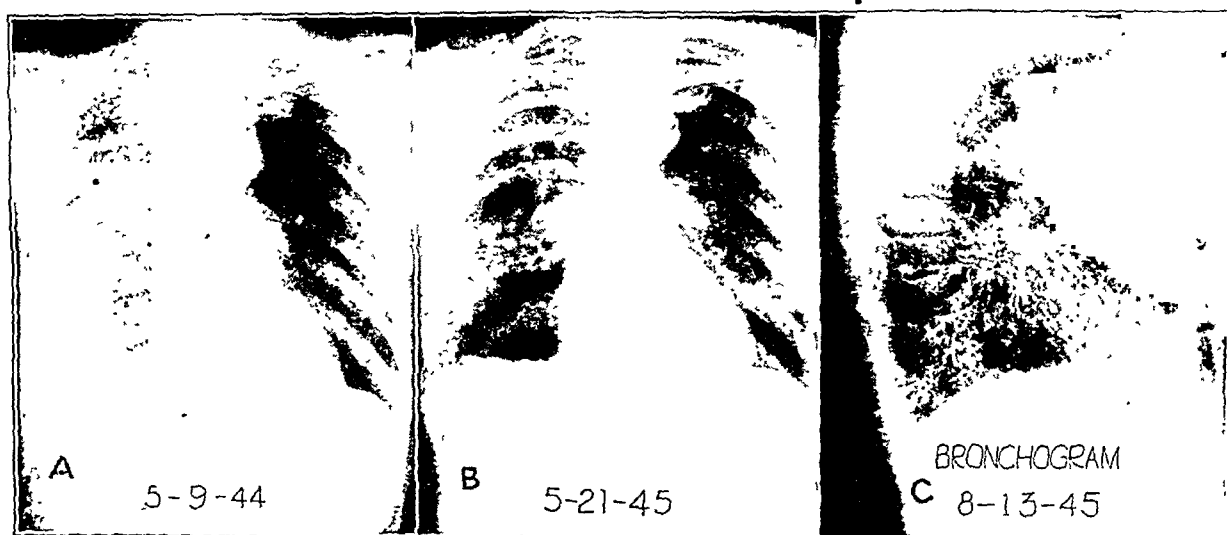


Fig. 6 (case 4).—Patient aged 57 with multiple chronic lung abscesses: A, large abscesses in the right upper lobe. B, appearance ten months after penicillin therapy, showing residual thickened pleura but no evidence of lung disease. C, bronchogram taken thirteen months after penicillin therapy, showing residual bronchiectatic cavities in the right lung.

right upper lobe obtained through the bronchoscope revealed hemolytic and nonhemolytic streptococci and *Neisseria catarrhalis*.

Roentgenograms.—The course of the disease is well illustrated by the changes in the roentgenograms, which were taken at frequent intervals during the twenty month period of observation. The changes in the serial chest films are reproduced in the series of sketches in the upper part of figure 5. In the first roentgenograms of the lungs, taken January 18, there was a 2 cm. cavity just above the hilus in the right upper lobe. It had a distinct fluid level and was surrounded by an area of consolidation. Eight days later two abscesses were present, which on lateral view were seen to be located in the posterior portion of the chest. The chest film taken on March 16 showed a large abscess in the right upper lobe which apparently had no relationship to the abscesses previously described and the consolidation had extended to involve the right middle lobe area. This cavity showed progressive diminution in size on the films taken at monthly intervals and for the first time was not visualized on the film taken on November 8, which was interpreted as showing only evidence of pleural thickening. The roentgenogram of the chest taken on May 21, 1945 showed some residual thickened pleura but no evidence of lung disease. At the time of the last follow-up

of penicillin therapy, and the volume of the sputum decreased to an average of only 45 cc. per day. The temperature continued normal during the remainder of the time the patient was receiving the first course of penicillin, but it again became septic in type four days after the drug was stopped. Thirty-four days later, on the 134th hospital day, penicillin was again started, the same route and dose schedule being used; on the 153d hospital day the dose was decreased to 10,000 units and given intramuscularly every three hours, and seventeen days later it was further decreased to 5,000 units intramuscularly at three hour intervals until the drug was discontinued on July 25, 1944, which was the 299th hospital day. This patient received a total of 6,360,000 units of penicillin given intramuscularly during a period of seven and one-half months. The volume of the sputum again decreased progressively during the second course of penicillin, being 150 cc. on the 134th hospital day when this series was started, 45 cc. on the 140th hospital day and 15 cc. on the 170th hospital day, and at the time of discharge he was expectorating an average of only 2 cc. each day. The patient's weight gradually increased from 107 pounds (48.5 Kg.) at the time the second course of penicillin was given and reached 116 pounds (52.6 Kg.) on the 134th hospital day, 118 pounds (53.5 Kg.) on the 140th hospital day and 133 pounds (60 Kg.) on the 170th hospital day. At the time of release he

weighed 137 pounds (62 Kg.), which was his usual weight. This patient has been followed in the outpatient department of this hospital and on Nov. 8, 1944 he was asymptomatic and weighed 140 pounds (63.5 Kg.). He was last examined on Aug. 13, 1945, at which time he was still entirely free from symptoms and was working seven days each week at hard labor in a defense factory. His weight at that time was 140 pounds.

This patient had chronic multiple lung abscesses for which he received sulfadiazine and sulfamerazine in the usual therapeutic doses during a thirteen week period without improvement. During the next seven and one-half months he received more than 6 million units of penicillin given by the intramuscular route. With this therapy, which was almost continuous, he showed a gradual progressive clinical improvement. To date he has been observed for a total of twenty months and is now without symptoms and is employed full time at his previous occupation as a factory worker.

We believe that the long-continued use of penicillin in this case controlled the pulmonary infection and thus permitted the gradual healing of the pulmonary abscesses. We believe that without therapy in this case death was very likely and that penicillin should be considered as having been instrumental in the recovery. We attribute the satisfactory response to the long-continued use of penicillin, which controlled the pulmonary infection and thus permitted the gradual healing of the multiple abscesses.

COMMENT

It is obvious that the collective information on the subject of penicillin therapy of lung abscesses is too meager at present to determine the exact place of this new antibiotic in the treatment of these cases. These 4 cases are reported solely to add to the collective statistics that will eventually enable the medical profession to evaluate this new drug.

The total amount of penicillin given to the patients who have been treated in this hospital was greater than that given by others to patients with lung abscesses. The seemingly greater efficacy of penicillin therapy in this small series when the results are compared with the collective series (shown in the table) may be due entirely to chance. Evidently the total dosage is not a significant factor, for the largest total doses previously reported were given to patients who were not cured (fourth case of Dawson and Hobby in the table and third and fourth cases of Barach and his associates in the table).

The duration of continuous intramuscular penicillin therapy employed in the cases which form the basis for this report has been longer than that used in any of the previously reported cases. Patient 1, with an acute lung abscess, was given continuous treatment for thirty-seven days. Patient 2, with acute lung abscesses, was treated for thirty-nine days. Patient 3, who had a pulmonary abscess following an embolus to the lung, was treated continuously for eighty-one days. Patient 4 received daily injections of penicillin for one hundred and sixty-six days without interruption. It would appear that this long-continued chemotherapy is required to control the surrounding infection adequately. Much more detailed clinical work is necessary before the final word can be said about the dosage of penicillin in lung abscesses.

We wish to stress the advisability of obtaining bronchograms in the follow-up study of all patients with lung abscesses treated with penicillin. The importance of

this is clearly shown in our experience in cases 2 and 4. No cavities were reported on the routine roentgenograms of the chest in case 2 taken nine months after all evidence of pulmonary disease had subsided, but the presence of a residual cavity was easily demonstrated following the instillation of iodized oil. In case 4 the existence of bronchiectasis, not suspected on routine roentgenograms, was proved by the same method. It is therefore evident that, before one is justified in concluding that a patient with pulmonary abscesses treated with penicillin is cured, a thorough investigation with some radiopaque medium is indicated.

It is noteworthy that these patients tolerated such massive doses of penicillin without any significant untoward reactions. The patients with acute lung abscesses (1, 2 and 3) received 6,380,000, 7,700,000 and 14,175,000 units of penicillin respectively. The patient who had multiple chronic lung abscesses was given a total of 6,360,000 units of penicillin over seven and one-half months of hospitalization.

Our experience, though limited, has been similar to that reported by others. It seems probable that many acute lung abscesses may be cured by this means. In the chronic cases of lung abscesses in which there is adequate drainage through a bronchus, it would appear that recovery may be expected with the use of penicillin alone if continued sufficiently long. In those cases of chronic lung abscesses which do not communicate with a bronchus to allow free drainage, surgical intervention will probably be required. It is predicted that if lung abscesses are recognized early and treated vigorously with penicillin, it can be reasonably expected that the mortality and morbidity from this disease will further decrease.

SUMMARY

Of a total of 31 previously reported cases of lung abscess treated with penicillin, 13 have shown complete recovery, 8 have shown satisfactory improvement and in 10 there was either no change or death occurred.

Of 4 patients with pulmonary abscesses whom we treated with penicillin administered by the intramuscular route, 3 had acute pulmonary suppuration with cavity formation and the fourth had chronic lung abscesses. All of these patients had mixed infections. The period of follow-up observation of the patient with chronic lung abscesses was twenty months; the patients with the acute abscesses have been studied for five, six and twelve months. There has been complete recovery in 2 of the acute cases. In case 2 there was complete healing of one abscess and resolution of the surrounding pneumonitis, but a residual thin walled cavity still persists. The presence of this cavity was not evident on the routine roentgenograms but was easily demonstrated on the bronchograms. Patient 4, the one with multiple chronic lung abscesses, has shown complete clearing of the original abscess cavities but has many saccular bronchiectatic cavities. The area involved with the residual bronchiectasis is the right middle and lower lobes and is not the site of the previous cavities.

In our experience the long-continued use of penicillin has resulted in the control of the surrounding pneumonitis in all 4 cases and has permitted the healing of the abscess cavities in 3 of them. We are of the opinion that if lung abscesses are recognized early and vigorously treated by long-continued penicillin administration there will be an appreciable reduction in the morbidity and mortality from this disease.

PERIPHERAL NERVE INJURIES IN
EUROPEAN THEATER OF
OPERATIONSMANAGEMENT, WITH SPECIAL REFERENCE TO
EARLY NERVE SURGERY

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The improper management of peripheral nerve injuries, as is well known, can leave the patient with a useless, anesthetic limb, amputation of which is frequently the lesser evil. The fact that approximately 15 per cent of all battle injuries of the extremities in the European Theater of Operations were complicated by nerve damage therefore made the planning of an efficient program for their management a matter of extreme importance. Like all programs planned in wartime, the regimen finally devised was based on fundamental surgical principles modified, as circumstances required, to bring them into accord with the exigencies of the military situation.

The neurosurgical principles on which the management of peripheral nerve injuries in the European Theater of Operations was based may be briefly stated as follows: 1. In view of the irreparable degenerative changes which occur in the distal segment and the end plates of a severed nerve with the passage of time, early surgical repair is essential for the best results. 2. Immediate primary suture of a severed nerve is desirable theoretically but in practice is not a good plan, if only because battle injuries are almost invariably associated with contusion of nerve tissue. 3. Experimental and histopathologic evidence¹ indicates that the optimum time for end to end suture of a severed nerve is between the third and the ninth week after injury, and that repair between the twenty-first and the twenty-eighth day is probably productive of the best end results and can be carried out with the least technical difficulties.

In military practice the selection and disposition of cases for operation and other phases of treatment are sometimes necessarily modified by factors which may not be related to the professional welfare of the patient. The chief of these difficulties has to do with transportation. In Circular Letter No. 81, dated June 10, 1944, the Office of the Chief Surgeon, European Theater of Operations, issued instructions to all military installations in this theater that neurosurgical casualties² should be transferred to the United Kingdom, for admission to some one of the twelve neurosurgical centers which had been established there, as promptly as transportation facilities permitted. Priorities for evacuation in this category went first to spinal injuries, second to penetrating injuries of the brain, third to closed cranial injuries and last to peripheral nerve injuries.

From the standpoint of risk to life this order of priority was obviously justified. The practical result,

however, was that patients with peripheral nerve injuries, because of their low priority of evacuation, seldom reached the neurosurgical centers in the United Kingdom until two to three weeks after wounding. In the interim, the injuries had been debrided, in conformity with the regulations established for the management of soft tissue wounds, and delayed wound closure had usually been done at some one of the installations at which the patients had been temporarily delayed in transit.

Under these circumstances it would have been desirable to perform most of the definitive peripheral nerve surgery in the zone of the interior (the United States). For one thing, it is imperative in an active theater of operations to keep nonemergency surgery at a minimum, leaving hospital beds free for more urgent requirements. For another, most patients with peripheral nerve injuries are never again fit for combat duty and may be promptly written off as military effectives. On the other hand, experience soon showed that for military reasons evacuation to the zone of the interior was often so long delayed that the optimum period for nerve repair would have passed by the time the patients had reached neurosurgical centers in the United States. In the absence of complications, however—and they are not the rule in properly managed cases—the usual neurosurgical patient could safely be put aboard a hospital carrier within a few days after operation.

The solution of the problem, then, was to correlate the available transportation and the optimum time for neurosurgery in each case, which was done as follows: 1. Disposition board proceedings were completed as soon as possible after the patient was admitted to the hospital from the zone of combat. 2. Patients with serious wound infections or with extensive soft tissue injuries requiring plastic repair were evacuated to the United States as promptly as possible, without being submitted to neurosurgery in the United Kingdom. 3. If transportation was available, all other neurosurgical casualties were prepared for evacuation to the zone of the interior. 4. If it was not, or if for any other reason, including complicating injuries, evacuation was undesirable, the waiting period was utilized for the repair of nerve injuries and the patients were evacuated to the United States as soon after operation as their condition permitted and facilities were available.

One of the serious difficulties in the management of peripheral nerve injuries in the European Theater of Operations had to do with the totally inadequate number of trained neurosurgeons available to handle the casualty load. The deficit was met in two ways, by the use of a number of general surgeons in the theater who had had some training in traumatic surgery in the zone of the interior and by the use of general surgeons of sound training who were rapidly instructed in fundamental neurosurgical principles. These two supplemental groups of surgeons were assigned to special neurosurgical centers, in which they worked under chiefs of service who were formally trained in neurosurgery and who usually had had considerable experience in their specialty in civilian practice. The centers were under the continuous supervision of local and regional consultants in neurosurgery, who in turn maintained intimate contact with the Professional Services Division of the Chief Surgeon's Office, European Theater of Operations. The entire program could thus be unified by standardization of diagnostic and therapeutic methods. It is not too much to say that it was

1. Young, John Z.: The Process of Regeneration of Nerve and Muscle Following Immediate and Delayed Suture. *Tr. Am. Neurol. A.* 1943, pp. 41-42. Brenner, Charles: Injuries to Peripheral Nerves: A Review of Recent Literature. *War Med.* 5: 21-35 (Jan.) 1944. Young, J. Z.: Effect of Delay on Success of Nerve Suture. *Proc. Roy. Soc. Med.* 37: 581-582 (Aug.) 1944. Lyons, William, and Woodhall, Barnes: *Atlas of Peripheral Nerve Pathology*, to be published.

2. Neurosurgical injuries had previously been defined as including all surgical lesions of the central, peripheral and sympathetic nervous systems, the classification being necessary because the medical departments of some of the other Allied armies included only craniocerebral injuries in this category.

the resourcefulness and energy of the young general surgeons who were suddenly called on to become proficient in neurosurgery which made possible the handling of so many peripheral nerve injuries within the optimum period for repair.

PROGRAM OF MANAGEMENT

The Manual of Therapy for the European Theater of Operations issued May 5, 1944, outlined the following plan of management for peripheral nerve injuries, which, it is interesting to note, required no substantial alterations in the year of heavy fighting which followed:

1. Injury to one or more of the major nerve trunks should be regarded as a possibility in every wound of the extremities. Simple tests for motor and sensory function should be used to determine which nerve (or nerves) is involved.

2. The existence of a nerve injury does not warrant any departure from the regulation management of soft tissue wounds, that is, initial débridement and delayed wound closure.

3. If when débridement is done the severed nerve ends are visualized, they should be approximated whenever possible. If the gap does not permit approximation, the ends should be snugly anchored to surrounding soft tissue. Fine stainless steel or tantalum wire should be used for suture material, both being useful for later roentgenologic demonstration of the location of the injury and the extent of the defect. The purpose of the initial suture or temporary anchoring of the nerve ends is to prevent their retraction, which greatly complicates later end to end suture. Elaborate primary nerve suture should not be attempted.

4. The soft tissue wound should, as usual, be left open, to be closed at an appropriate time in an installation farther to the rear. The muscles or fascia should be approximated loosely over the exposed nerve trunk. A pack should never be placed over an exposed major nerve trunk.

5. Splinting is usually a preliminary requirement for transportation. About half of all nerve injuries are associated with injuries to one or more of the long bones, but even in the absence of bone injuries the extremity should be immobilized in the most favorable position to prevent deformity. This can usually be achieved with bandages, blankets or rolls of clothing; casts and elaborate splints are seldom required for evacuation. Protection of an extremity deprived of sensation is, however, essential.

6. An extremely important phase of preevacuation management is the careful recording of the condition of the injured nerves at the first observation and a statement as to exactly what was done at débridement. The notes can be written either on the emergency medical tag or on the cast. Lack of these data may delay subsequent surgery or result in unnecessary nerve explorations.

Every surgeon who participated in the peripheral nerve injury program was carefully instructed in the generally accepted technical principles of nerve repair. In particular, it was stressed: 1. That the nerve ends must be accurately trimmed until essentially normal tubules were visible. 2. That the divided ends must be approximated with the greatest care by interrupted epineural sutures. 3. That the suture line must be perfectly free from tension. 4. That hemostasis must

be rigid. The use of a through and through suture (sling stitch) was optional.

The suture material recommended for use throughout the European Theater of Operations was fine tantalum wire swedged on an atraumatic needle. A few surgeons, particularly at the beginning of the program, preferred fine silk, but wire was generally used, partly, as already noted, because of its usefulness in later roentgenologic demonstrations of the injury and partly because it is practically inert in human tissues.

A small cuff about the suture line was used in almost all of the cases handled in the European Theater of Operations. Usually it was of rolled tantalum foil, but in one installation a plasnia clot was used according to the technic of Tarlov,³ the variation being permitted for the purpose of obtaining comparative data as to the value of the two methods.

Casts for the correction of deformities due to nerve injuries were prohibited except during the postoperative immobilization period, removable splints being preferred. Extension of the flexed joint was usually begun at the end of the second week after operation and was completed by the end of the fifth week. It was believed that this policy was safe because of the comparative freedom from extensive fibrosis observed in patients treated by early nerve suture, and the plan also reduced the period of overseas hospitalization and permitted evacuation to the zone of the interior within the time policy of the theater.

PHYSICAL THERAPY

It was repeatedly emphasized, by directives, circular letters, conferences and personal visits, to all officers participating in the peripheral nerve injury program that operation was but a single phase of the treatment of an extremity paralyzed as the result of peripheral nerve injury. Obviously an extremity will be functionally useless, however satisfactory the nerve repair and subsequent regeneration may be, if temporarily denervated muscles are permitted to become irreversibly atrophied or fibrosed or if joints of the wrist, hand, ankle, fingers or toes are "frozen" beyond repair. For the best results in neurosurgery it is therefore essential that physical therapy be employed both before and after operation.

The excellent results obtained by the peripheral nerve injury program in the European Theater of Operations were at least in part due to the expansion of the Physical Therapy Service proportionately with the neurosurgical load. The Chief Surgeon's Office cooperated fully in this respect, by the authorization of additional space and equipment, the assignment of available Army personnel in excess of Table of Organization specifications and, whenever possible, the employment of trained British civilian personnel. As a result, the Physical Therapy Service became one of the most important departments of every neurosurgical center.

Recent experiments and clinical studies⁴ have indicated that daily galvanic stimulation of denervated muscles will prevent atrophy and retard fibrosis, and

3. Tarlov, I. M., and Benjamin, Bernard: Autologous Plasma Clot Suture of Nerve, *Science* 95: 258 (March 6) 1942.
4. Fischer, Ernst: Effect of Faradic and Galvanic Stimulation on Course of Atrophy in Denervated Skeletal Muscles, *Am. J. Physiol.* 127: 605-619 (Nov.) 1939. Gutmann, Ernest, and Guttmann, Ludwig: Effect of Electrotherapy on Denervated Muscles in Rabbits, *Lancet* 2: 169-170 (Feb. 7) 1942. Doupe, J., Barnes, R., and Kerr, A. S.: Studies in Denervation: Effect of Electric Stimulation on Circulation and Recovery of Denervated Muscle, *J. Neurol. & Psychiat.* 6: 136-140 (July & Oct.) 1943.

this measure was therefore employed as a routine in all cases, beginning with fifteen brisk contractions daily and progressing gradually to thirty contractions. When casts were used for postoperative immobilization, windows were cut over the bellies of the paralyzed muscle groups and galvanic stimulation was begun the day after operation. Other measures included massage, active and passive motion and the use of dry and moist heat as indicated. Particularly careful attention was given to the active and passive motion of small joints. Fixation by splints was kept at a minimum, detailed instruction of the patients in respect to the care of their own joints being considered more important than mechanical methods of fixation.

ANALYSIS OF DATA

Earlier in the war, during the fighting in the Mediterranean, many surgeons had been somewhat hesitant over applying the neurosurgical principles just outlined to battle casualties. Even the most skeptical, however, were apparently convinced of their wisdom and safety by the demonstration during the North African campaign that open, granulating soft tissue wounds could be closed within seven to ten days after wounding, with resulting primary healing, so that elective neurosurgical

Theater of Operations was less than 1 per cent, whereas in a series of similar cases in which operation was performed in the zone of the interior after the North African campaign it was as high as 10 per cent. The improvement is significant, for elective bone shortening, to facilitate end to end suture, is not a desirable procedure if it can be avoided, while most nerve grafts are clinical failures. I am not aware that a single successful large nerve graft, whether homogenous or autogenous, is on record in the United States Army. Early nerve suture, moreover, was proved to possess at least three major advantages over delayed suture: 1. Mobilization of the proximal and distal nerve segments was much more readily achieved. 2. Fibrosis in the wound, and particularly in the nerve stumps, was greatly minimized. 3. Flexion of contiguous joints was more easily accomplished.

The time lapse between wounding and neurosurgery varied from an average of twenty-eight days in the period immediately after D day to forty-two days in the period of heavy fighting before V-E day. The average of thirty-nine days for the whole period is longer than the most desirable interval, which is twenty-one to twenty-eight days after injury but is still well under the upper limit of ninety days. In some cases

Essential Data on 6,245 Peripheral Nerve Injuries Observed in the European Theater of Operations

	D Day Aug. 1, 1944	Aug. 1, 1944 Nov. 1, 1944	Nov. 1, 1944 Feb. 1, 1945	Feb. 1, 1945 V-E Day	Totals
Total cases.....	756	1,571	1,504	2,114	6,245
Surgical cases (percentages are in parentheses).....	259 (34.3)	789 (41.7)	754 (50.1)	1,080 (51.1)	2,873 (46.0)
Time lapse after injury (average in days).....	28	41	42	42	39
Neurolysis.....	111 (43.0)	330 (41.0)	385 (51.0)	529 (49.0)	1,345 (46.6)
Neurorrhaphy.....	148 (57.0)	460 (59.0)	369 (49.0)	551 (51.0)	1,528 (53.2)
Type of suture.....					
Silk.....	2 (1.2)	5 (1.0)	3 (0.8)	4 (0.8)	14 (0.9)
Cat.....	146 (98.8)	455 (99.0)	366 (99.2)	547 (99.2)	1,514 (99.1)
Wool.....	133 (90.0)	414 (90.0)	322 (90.0)	526 (95.5)	1,405 (92.0)
Primary.....	254 (98.0)	764 (98.0)	743 (98.6)	1,064 (98.5)	2,825 (98.3)
Secondary.....	5 (2.0)	16 (2.0)	11 (1.4)	16 (1.5)	48 (1.7)
Mortality.....	1 (0.1)				1 (0.01)

repair could be undertaken within the optimum time period without fear of serious wound infections. The European campaign presented an opportunity to test the program on a large scale.

A few comments on the data contained in the accompanying table may be useful. Of the 6,245 battle casualties hospitalized with major nerve injuries between D day and V-E day, approximately 46 per cent were operated on overseas. The remainder were evacuated to the zone of the interior for definitive surgery for a number of reasons, the most frequent of which was the inability of the neurosurgical centers abroad to handle larger operative loads within the optimum time limit for surgery. The rise in the volume of patients operated on overseas should be noted. The proportion rose from 34 per cent in the three weeks after D day to 50 per cent in the six months before V-E day, in spite of the increasingly heavy patient load.

In almost 47 per cent of the surgical cases the nerve was found intact, and neurolysis, usually external but occasionally internal, was done. In the remaining cases the operation consisted of end to end suture. This is the most desirable method of treating divided nerves, and the fact that it could be applied in almost every case in the series in which it was indicated is evidence of the soundness of the whole program of early nerve suture. The number of insurmountable gaps in the group of cases under consideration from the European

associated injuries and in others delayed closure of the wound accounted for the delay in definitive neurosurgery, but the most frequent reason was the difficulties encountered in evacuation from the continent, particularly during the winter months, when air evacuation was often hampered by bad flying conditions.

On the other hand, the time lapse does not seem unduly long when one recalls that in the interval the patients had been removed from the front line and transferred to various installations along the line of evacuation on the continent before they were finally triaged to special neurosurgical centers in the United Kingdom. On the whole, the thirty-nine day average probably represents the shortest practical period within which definitive neurosurgery can be done on large groups of casualties under conditions of active warfare.

That primary wound healing occurred in more than 98 per cent of the cases is itself convincing testimony as to the wisdom of delaying neurosurgery for three to four weeks after débridement of the initial wound. The policy of early nerve stretching, however, was possibly somewhat overemphasized. A recent follow-up⁵ of a large number of the cases included in this study has revealed 4 per cent of proved disruptions of the suture line, which perhaps can be partially accounted for by this practice. For the present, therefore, no positive statements can be made as to the

5. Woodhall, Barnes: Unpublished data.

optimum time for joint extension, since so many varied factors entered into the analysis.

In many of the simpler cases in the series operations were performed under local (procaine) infiltration analgesia. Operations on the sciatic nerve were usually performed under spinal analgesia. All brachial plexus injuries and many combined injuries of the upper arm were handled under intratracheal ether anesthesia.

The surgical mortality for the whole series was 0.03 per cent. The single death followed local nerve block, in preparation for exploration of a common peroneal nerve lesion, and was presumably the result of a procaine reaction. The fact that nearly three thousand consecutive major neurosurgical operations could have been performed with but one death is ample testimony to the competence of the anesthetists, particularly when it is remembered that neurosurgical procedures are necessarily complicated and prolonged and that as much as five hours may be required for a single operation.

It might be added that at the beginning of the program early nerve surgery was carried out only in the injuries in which bone complications were not present. Later, combined injuries were brought under the same program.⁶ The regimen included débridement and delayed wound closure, balanced skeletal traction for immobilization, chemotherapy, joint operation by the neurosurgeon and orthopedist, and preoperative and postoperative physical therapy.

A Peripheral Nerve Registry has been established in the Professional Consultants Division, Office of the Surgeon General, the purpose of which is to follow up, analyze and assess at regular intervals the results of the program of management outlined in this communication. The preliminary data,⁵ which are now being prepared for publication, fully confirm the soundness of the program adopted.

SUMMARY AND CONCLUSIONS

A routine adopted for the management of peripheral nerve injuries in the European Theater of Operations was based on fundamental surgical principles modified, as circumstances required, to bring them into accord with the exigencies of the military situation.

The essential features of the program were (1) débridement and delayed primary closure of the wound, with approximation or anchoring of the severed nerve ends if they were visualized at the first operation; (2) suture of the divided nerve within twenty-one to ninety days after wounding, but preferably between twenty-one and twenty-eight days, when the least technical difficulties and the best end results can be expected; (3) a judicious use of immobilization during transportation and after neurorrhaphy, preferably by removable splints; (4) preoperative and postoperative physical therapy.

The time at which neurorrhaphy was performed was necessarily influenced by the military circumstances and chiefly by the availability of transportation, but even under active combat conditions definitive surgery, either overseas or in the zone of the interior, was practically always performed well within the upper optimum limit.

In the period between D day and V-E day 2,873 peripheral nerve injuries were treated by early nerve surgery in overseas hospitals, with a mortality of 0.03 per cent and with primary wound healing in 98.3 per cent of all cases.

6. Spurling, R. G.: Early Treatment of Combined Bone and Nerve Lesions, *Bull. U. S. Army M. Dept.* 4:444-446 (Oct.) 1945.

Clinical Notes, Suggestions and New Instruments

PANTOPAQUE MENINGITIS DISCLOSED AT OPERATION

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Although the ideal medium for x-ray visualization of the spinal subarachnoid space has not yet been found, pantopaque appears to be the most satisfactory agent thus far introduced for this purpose. It is more irritating than air or other gases used for myelography, but its use results in much better visualization of the subarachnoid space. It is free from the danger of a radioactive substance such as thorotrast, and it causes less severe reactions than tyrogl.¹ Its advantages over lipiodol are that it flows more freely within the subarachnoid space, fills the arachnoidal prolongations along the nerve roots better, thus being more suitable for the disclosure of herniated intervertebral disks, it is less apt to show false filling defects and it may be more readily removed from the thecal sac. The meningeal response to the injection of pantopaque has been described as "minimal and transient"² and the material is being employed on a widespread scale, sometimes indiscriminately, for the diagnosis and localization of herniated intervertebral disks and other spinal lesions. My purpose in this report is to call attention to a rather pronounced inflammatory response which was found among the nerve roots of the cauda equina at operation sixty hours after 3 cc. of pantopaque had been introduced intrathecally.

REPORT OF CASE

A man aged 37, a salesman, was admitted to the hospital for investigation as to the cause of low back pain which radiated down the posterior aspect of one or the other lower limb, more recently the left. The pain occurred in attacks, each lasting several weeks and coming on about twice a year for the past eleven years. Examination revealed tenderness on firm pressure over the fourth lumbar spine, and hyperextension of the lumbar spine produced considerable low back pain, which radiated posteriorly down the left lower extremity. Neurologic examination revealed no abnormality. X-rays of the lumbosacral spine showed localized hypertrophic arthritis of the bodies of the third and fourth lumbar vertebrae. Lumbar puncture was done in the fourth lumbar interspace and there was no evidence of any block on manometric examination. There were no cells in the spinal fluid, but the globulin was reported as "moderately increased" and the total protein was very slightly elevated (54.8 mg. per hundred cubic centimeters). Three cc. of pantopaque was injected intrathecally. About five hours later the patient complained of generalized headache and stiffness of the neck. His temperature rose to 100.8 F. from an initial level of 98.6 F. On the day after injection the temperature rose to 102 F. and on the following day (of operation) the headache subsided but there was still some nuchal rigidity and the temperature fell to 100 F.

The results of the myelographic examination were inconclusive, but in view of the severity and duration of the pain, together with its refractoriness to conservative medical and orthopedic treatment, an interlaminar exploration of the fourth, fifth and the third lumbar interspaces on the left side was done. There was no evidence of a herniated intervertebral disk, and the spine and lamina of the fourth lumbar vertebra were removed. The dura and arachnoid were opened and considerable whitish, soft, stringy exudate, somewhat adherent to arachnoid and nerve roots of the cauda equina, was seen. No other abnormality was found. The pantopaque was removed from the subarachnoid space.

From the Neurosurgical Service of the Flower-Fifth Avenue Hospital.
1. Left, H. H., and MacLean, J. A., Jr.: Visualization of the Brain and Spinal Cord with Diiodotyrosine-Gelatin Contrast Medium, Including Observations on the Fate of This Material, *Arch. Neurol. & Psychiat.* 48:343 (Aug.) 1942.
2. Steinhilber, T. B.; Dungan, C. E.; Furst, J. B.; Plate, J. T.; Smith, S. W.; Darling, A. P., and Wolcott, E. C., with Warren, S. L., and Strain, W. H.: Iodinated Organic Compounds as Contrast Media for Radiographic Diagnosis, *Radiology* 43:230 (Sept.) 1944.

Some of the material removed at operation was sent to the laboratory for culture, which failed to show any bacterial growth within forty-eight hours. The remainder of the operative specimen was prepared for microscopic study. Examination showed a meshwork of fibrin strands with numerous embedded polymorphonuclear leukocytes, lymphocytes and plasma cells. There were globular spaces within the tissue, which probably contained pantopaque, lost during the process of histologic preparation. The tissue was clearly inflammatory, as shown in the illustration. Since it resembled, at operation, partially organized pus, the patient was given penicillin therapy, which was discontinued on the fifth postoperative day after he had been free from fever and stiff neck for three days. He made an uneventful recovery from his operation and was discharged from the hospital on the twenty-second postoperative day free from discomfort. The postoperative diagnosis was hypertrophic arthritis of the third and fourth lumbar vertebrae and pantopaque meningitis.



Section of histologic preparation of material removed at operation showing inflammatory reaction caused by pantopaque. Hematoxylin and eosin stain, $\times 150$.

COMMENT

Although the inflammatory tissue was removed from the subarachnoid space underlying the fourth lumbar lamina, there is no doubt, in view of the headache, nuchal rigidity and fever that followed the pantopaque injection, that the inflammatory reaction within the subarachnoid space was fairly widespread. The cultures taken from the operative material showed no growth of bacteria, and there is no satisfactory explanation for the inflammatory change other than that it was caused by the presence of pantopaque within the spinal canal. Peacher and Robertson³ made a study of the cerebrospinal fluid findings in a series of 60 patients on whom lumbar punctures were done at varying intervals after pantopaque myelography. They recorded spinal fluid cell counts varying from 685 to 2,150 white blood cells per cubic millimeter in 3 cases. The highest spinal fluid cell count in the remaining cases was 70, the majority of the cases showing no increase of cells or of total protein in the fluid.

3. Peacher, W. S., and Robertson, R. C.: Pantopaque Myelography: Results, Comparison of Contrast Media and Spinal Fluid Reaction, *J. Neurosurgery* 2:220 (May) 1945.

Steinhausen and his co-workers² described a foreign body response to the presence of pantopaque in the subarachnoid space of dogs, and they included in their report the results of examination of a human spinal cord seventeen days after the subarachnoid injection of pantopaque. Few polymorphonuclear leukocytes were observed on the nerve roots. It is quite likely that in the present case reported the inflammatory reaction underwent dissolution, leaving a mere residue of innocuous scar tissue or thickened pia-arachnoid membrane. It is now two months since the operation, and the patient is free from symptoms and abnormal neurologic signs. On the other hand, it is also possible that patients who show a similar type of inflammatory reaction to the drug may develop extensive arachnoiditis such as occurred in a case described by Peacher and Robertson.³ In their case, "subsequent to the removal of a herniated intervertebral disk, bladder retention developed." Operation revealed "an extensive arachnoiditis involving the cauda equina." In their patient "the pantopaque had been completely removed after remaining in the subarachnoid space for about ten to fifteen minutes and it is difficult to presume that the arachnoiditis could have represented a reaction." However, since the symptom of the arachnoiditis followed the introduction of the pantopaque, the burden of proof is with those who disclaim a causal relationship, especially in view of the known meningeal reactions that sometimes follow use of the compound.

One must conclude that there is an element of risk associated with the use of pantopaque, namely the danger of provoking meningeal reactions with possible later neurologic symptoms and signs. Such sequelae, as in the case of other substances introduced into the spinal canal, such as anesthetic agents⁴ or lipiodol,⁵ may come on days or weeks after the injection and progress. Nevertheless there are situations in which myelography is necessary for accurate diagnosis. Until further research discloses a more innocuous contrast medium for myelography, the use of pantopaque seems justified. But its use should be limited strictly to those cases in which the diagnosis cannot be made without the aid of myelography. Furthermore, when pantopaque is used, the injection should be made immediately before fluoroscopy is done rather than hours or days in advance, as is sometimes practiced. Moreover, since Peacher and Robertson found that the meningeal reactions following the subarachnoid injection of pantopaque are more common after incomplete removal of the material, an attempt should be made to remove it completely from the spinal canal immediately at the close of fluoroscopy. This may be done by aspirating the oil from the subarachnoid space under fluoroscopic control or by the technic recently described by Scott and Furlow.⁶ According to their method the "cranial portion of the oil is flowed beneath the tip of the lumbar puncture needle." The stylet is removed from the needle and "the patient is told to take a deep breath and to bear down as if he were attempting to move his bowels. This, of course, is Valsalva's well known experiment of forced expiration against a closed glottis and has the effect of increasing the intraspinal pressure." During this maneuver the column of oil becomes narrowed, moves cranial and "comes bubbling out of the needle." This maneuver "is repeated as often as necessary until all the oil is removed. As a rule this is accomplished within twenty minutes, but occasionally it may take as long as forty minutes. At intervals the patient is examined fluoroscopically and the table is adjusted to keep the diminishing oil column beneath the tip of the needle." The advantage of this method of removing the oil is that the use of suction, which is at times painful and may damage nerve roots, is avoided. However, when this method proves unsuccessful in

4. Kennedy, Foster; Somberg, H. M., and Goldberg, B. R.: Arachnoiditis and Paralysis Following Spinal Anesthesia, *J. A. M. A.* 129: 664 (Nov. 3) 1945.

5. Bucy, P. C., and Speigel, I. J.: An Unusual Complication of the Intraspinal Use of Iodized Oil, *J. A. M. A.* 122:367 (June 5) 1943. Marcovitch, A. W.; Walker, A. E., and Jessico, C. M.: The Immediate and Late Effects of the Intrathecal Injection of Iodized Oil, *ibid.* 116: 2247 (May 17) 1941. Oldberg, Eric: A Plea for Respect for the Tissues of the Central Nervous System, *editorial, Surg., Gynec. & Obst.* 70:724 (March) 1940.

6. Scott, W. G., and Furlow, L. T.: Myelography with Pantopaque and a New Technique for Its Removal, *Radiology* 43:241 (Sept.) 1944.

removing the oil, one may have to resort to aspiration, which must be carefully done in order to avoid pain and trauma to the cauda equina.

CONCLUSIONS

From the present case reported and from a survey of the literature there is no doubt that an inflammatory and proliferative meningeal reaction may follow the intrathecal introduction of pantopaque. Its use should be restricted therefore to those cases in which critical information is urgently needed for diagnosis and treatment. When employed, it should be injected immediately before fluoroscopy is done and it should be removed immediately after the myelography.

Fifth Avenue at 105th Street.

NEOSTIGMINE METHYLSULFATE AN APPARENT SPECIFIC FOR ARACHNIDISM (BLACK WIDOW SPIDER BITE)

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Serious results have been observed from the bite of the spider for centuries. Records of these results have been made for over a hundred years, and a popular misconception of their gravity has gained wide acceptance. Carefully observed cases have failed to demonstrate much actual danger to life, but there is no question that the victims undergo severe and prolonged agony.

Latrodectus seems to be the only truly dangerous member of the spider family. Severe epidemics of systemic poisoning were reported in Spain in 1830, 1833 and 1840, and others in France, Italy and Corsica.¹ In the United States, *Latrodectus mactans* is widely distributed, being especially prevalent in the Southern states, the Ohio valley and the western coastal region. It is commonly known as the Black Widow, Shoe Button, Hourglass, T Dot or Po-Ko-Moo spider. It is shiny and coal black and is marked with an hourglass-shaped spot of red or orange on the ventral side of the globose abdomen. It inhabits dimly lighted, secluded places, such as privies, outlying buildings, lumber piles, stumps and the under side of floors and stones.

Bogen¹ reported 150 cases of spider bite, most of them in males, the majority of whom were bitten on the penis or adjacent parts while using outdoor privies. The syndrome of arachnidism which follows the bite has been graphically described by many. At the instant of the bite there is a sharp, stinging sensation which is acutely painful but transient. Fifteen to forty-five minutes later, acute pain appears in nearby regions and spreads centrifugally. It is most severe in the abdomen and legs but also spreads generally to the back, shoulders and arms. The patient is usually restless and cries out in pain. The thighs are usually flexed on the abdomen, the legs are flexed on the thighs, the arms folded on the chest. The systolic blood pressure is usually elevated. Other more variable symptoms are convulsions, paralyzes, urinary retention, shock, delirium, cyanosis, nausea, vomiting, dyspnea, anxiety, insomnia and cold sweats.

The most prominent and almost constant physical finding is a boardlike abdomen which is nontender to palpation. Motion of the extremities is usually limited by spasm of muscle groups. Fever, if present at all, is slight. Acute symptoms last twelve to forty-eight hours, but some cramps usually persist from one to two weeks.

Bogen¹ lists sixty preparations that have been used in treatment. Antitoxins have been developed in the horse and are said to shorten the course if given immediately after the bite.

Gilbert and Stewart² report almost immediate relief of pain from the intravenous use of calcium gluconate or chloride. Our experience in several cases fails to support the therapeutic effectiveness of calcium salts.

Because cases of spider bite are seen only infrequently in Charleston, S. C., it was felt that the following case, with apparently spectacular relief from neostigmine methylsulfate, should be reported in order that trial by others might more quickly prove its value:

REPORT OF CASE

A Negro youth aged 16, an automobile painter, was admitted to Roper Hospital on Aug. 22, 1945 complaining that he had been bitten on the head of the penis by some insect. At 5 p. m. he sat on the seat of an outdoor privy. A few seconds later he felt a violent, searing pain on the glans penis. He immediately struck himself on the spot and felt some "bug" being brushed off, but he did not see it. The initial pain lasted only two or three minutes.

Approximately twenty minutes later he noted the onset of cramping pains beginning in the groins and extending rapidly to the abdomen. In a matter of minutes the cramps became violent, and agonizing pain was felt over the entire abdomen. He felt his abdomen becoming hard, and relaxation was impossible. One hour after the bite, cramps were present in the back and legs, being especially severe in the legs. There were mild headache and nausea, but no vomiting. Others who shared the privy stated that it contained many spider webs, and that they frequently saw "black and red" spiders.

The patient was well developed and well nourished. Examination one hour after the bite showed the temperature 99.6 F., pulse rate 100, respiratory rate 20 and blood pressure 150 systolic, 106 diastolic. The blood picture was within normal limits; there was no leukocytosis. The urine was normal aside from 2 plus albumin. He was recumbent on the examining table with the thighs flexed on the abdomen, the legs flexed on the thighs, the arms folded on the chest. He was very nervous and tossing about in great pain. Nuchal rigidity was slight and relaxation cogwheel in nature.

The Brudzinski neck sign was negative. The heart was slightly enlarged and rapid with pronounced sinus arrhythmia. A grade 2 blowing apical systolic murmur was heard. Respiration was rapid and almost entirely thoracic. The abdomen was rigid and boardlike but not tender to palpation. The tendon reflexes were active. Sweating was profuse. Muscle spasm was pronounced, particularly in the hamstring group, plantar flexors of the foot and the extensors of the spine. Fine fibrillary twitchings of isolated muscle fibers were present, especially in the pectoral group. An admission diagnosis of arachnidism was made.

When first seen, about one hour after the bite, he was given 10 cc. of 10 per cent calcium gluconate intravenously as recommended by Gilbert and Stewart. There was no abatement of symptoms forty-five minutes later when the injection was repeated. Two hours after the bite the symptoms were more severe, and pronounced periorbital edema was present. He next received an intravenous infusion of 1,000 cc. of 5 per cent glucose in isotonic solution of sodium chloride. Three hours after the bite 5 grains (0.32 Gm.) of pentobarbital sodium was given intramuscularly. Four hours after the bite he received codeine sulfate ½ grain (0.032 Gm.) and acetylsalicylic acid 10 grains (0.6 Gm.) by mouth. Five and one-half hours after the bite he was again given 5 grains of pentobarbital sodium intramuscularly. Six and one-half hours after the bite the patient still showed no sign of having obtained any relief. He remained very restless, cried out in pain and tossed about in bed. The abdomen and other muscle groups remained rigid.

Since good results in the treatment of muscle spasm with neostigmine had been reported in poliomyelitis and rheumatoid arthritis³ and since no relief had followed the recommended

2. Gilbert, E. W., and Stewart, C. M.: Effective Treatment of Arachnidism by Calcium Salts: Preliminary Report, *Am. J. M. Sc.* 180: 532-536 (April) 1935.

3. Kabat, Herman, and Knapp, M. E.: The Use of Prostigmine in the Treatment of Poliomyelitis, *J. A. M. A.* 122: 989-995 (Aug. 7) 1943. The Treatment of Muscle Spasm in Rheumatoid Arthritis and Associated Conditions: Preliminary Report, *ibid.* 124: 1237-1239 (April 29) 1944.

From the Department of Medicine, Medical College of the State of South Carolina, and the medical service of Roper Hospital.
1. Bogen, Emil: A Study in Spider Poisoning, *J. A. M. A.* 86: 1894-1896 (June 16) 1926.

therapy, the idea of trying neostigmine occurred to one of us (J. E. Bell). About six and one-half hours after the bite the patient was given 2 cc. of 1:2,000 neostigmine methylsulfate and $\frac{1}{150}$ grain (0.0004 Gm.) of atropine sulfate intramuscularly, the latter to counteract the muscarinic effects of neostigmine.

Fifteen minutes after the neostigmine and atropine the abdomen was becoming softer and a wider range of extremity motion was possible. One hour after the injection the patient was comparatively asymptomatic except for a mild headache, the periorbital edema and slight arthralgia in the right ankle. The initial dose of neostigmine and atropine was repeated at four hour intervals for four doses.

The next morning the patient was asymptomatic except for some residual periorbital edema. His blood pressure at the end of twenty-four hours was 110/74 as compared with 150/106 on admission. A slight frontal headache, always relieved with acetylsalicylic acid, remained for thirty-six hours. After six days' observation he was discharged.

COMMENT

1. In a typical case of arachnidism, the symptoms failed to respond to calcium gluconate and sedatives for a period of five and one-half hours.

2. Dramatic and complete relief of muscle spasm and pain followed within one hour the intramuscular injection of 2 cc. of 1:2,000 neostigmine methylsulfate with $\frac{1}{150}$ grain of atropine sulfate.

3. This single case is presented in the hope that this apparently specific therapy will be tried in other cases without delay.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The following report has been adopted by the Council for publication.

AUSTIN SMITH, M.D., Secretary.

PREPARATIONS EXEMPT FROM COUNCIL CONSIDERATION

The following official preparations have been declared exempt from Council consideration for inclusion in New and Nonofficial Remedies, as their actions, uses and nature are sufficiently well understood by physicians not to require such inclusion.

This list has been adopted for publication so that it may be brought to the attention of all manufacturers and other interested groups. From time to time there may be added other drugs, the names of which will also be published.

Iron and Ammonium Citrates
Ferrous Sulfate
Calcium Gluconate
Antimeningococcal Serum
Liver and Stomach Preparations included in U. S. P.
Digitalis Preparations included in U. S. P.
Acetylsalicylic Acid
Caffeine with Sodium Benzoate
Carbon Dioxide
Oxygen
Oxygen Carbon Dioxide Mixtures
Chlorinated Paraffin (Chlorococane)
Cinchophen
Necinchophen
Dextrose Solution
Sodium Chloride Solution
Isotonic Solution of Three Chlorides
Sodium Citrate
Sodium Biphosphate
Magnesium Sulfate
Trioxymethylene (Paraformaldehyde U. S. P. N)
Methylene Blue
Quinine and Urea Hydrochloride
Salicylic Acid
Sodium Salicylate
Natural Oil of Sweet Birch (Methyl Salicylate)
Pentobarbital Sodium
Papaverine Hydrochloride
Friture Hydrochloride
Tetraquine
Tribasic Calcium Phosphate
Magnesium Trisulfate
Tribasic Magnesium Phosphate
Ickthammal Preparations
Streptanilin

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., Secretary.

ANTIVENIN (LATRODECTUS MACTANS).—An antitoxic serum prepared by immunizing horses against the venom of the black widow spider (*Latrodectus mactans*).

Actions and Uses.—This material, which is standardized on the basis of its ability to neutralize the venom of the black widow spider when the two are injected simultaneously in mice, is claimed to be indicated in the treatment of patients suffering from symptoms due to bites inflicted by the black widow spider (*Latrodectus mactans*). Prior to use, tests for serum sensitivity should be made, test material consisting of 1:10 dilution of isotonic solution of normal equine serum, which is injected intradermally. If there is a positive skin reaction, an eye test consisting of placing a few drops of the test material on the conjunctiva and watching for ten minutes should be undertaken. If there is a negative result from the skin test, the therapeutic serum can be administered. However, if there is a positive reaction in the eye following the positive skin test, serum therapy should be avoided. If there is a positive skin test and a negative eye test, the individual may be desensitized before administering the serum. The amount of material injected into the skin for the intradermal test should be not more than 0.02 cc. of the test material. The result can be evaluated in ten minutes, a positive reaction consisting of an urticarial wheal surrounded by a zone of erythema.

Associated treatment includes hot plunge baths, intravenous injection of magnesium sulfate, 20 cc. of 10 per cent solution, or intravenous injection of 10 per cent calcium gluconate. Barbiturates may be used for restlessness. Apparently nothing is gained by local treatment at the site of the bite.

Dosage.—An injection of 2.5 cc. of serum is administered intramuscularly.

SHARP & DOHME, INC., PHILADELPHIA

Lyovac Antivenin (*Latrodectus mactans*): 'Vacule' ampul-vial containing a sufficient amount of lyophilized antivenin to yield 2.5 cc. of restored double-concentrated antivenin with phenol 0.35 per cent as a preservative; packaged with a 2.5 cc. ampul of distilled water and one 1 cc. vial of normal horse serum (diluted 1:10) as test and desensitizing material.

A lyophilized antitoxic serum prepared by injecting horses with venom of black widow spiders (*Latrodectus mactans*).

A process of lyophilization consists in the following: The antivenin in specially designed final containers is immersed in a freezing mixture to congeal the substance rapidly with the least molecular rearrangement. The container is then subjected to a high vacuum to accomplish dehydration, which is continued until the residual moisture content is less than 1 per cent, and finally sealed under vacuum.

PYRIDOXINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1944, p. 618).

The following dosage form has been accepted:

ENDO PRODUCTS, INC., RICHMOND HILL, N. Y.

Solution Pyridoxine Hydrochloride: 1 cc. ampuls of 25 mg. and 50 mg. per cc. and 10 cc. vials of 50 mg. per cc.

SULFATHIAZOLE (See New and Nonofficial Remedies, 1945, p. 202).

The following dosage form has been accepted:

VOGEL LABORATORIES, MOHEGAN LAKE, N. Y.

Emulsion Sulfathiazole 5% and 10% Sterilized: 50 cc. and 200 cc. bottles. A 5 per cent or 10 per cent suspension of sulfathiazole in an emulsion of beeswax, liquid petrolatum, triethanolamine and water.

STAPHYLOCOCCUS TOXOID (See New and Nonofficial Remedies, 1945, p. 565).

The following dosage form has been accepted:

AYERST, McKENNA & HARRISON, LTD., NEW YORK

Staphylococcus Toxoid: 3 cc. vials containing in each cubic centimeter the toxoid derived from 20,000 necrotizing doses of toxin. Preserved with 1:20,000 merthiolate.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, DECEMBER 8, 1945

ACUTE NONSPECIFIC MYOCARDITIS

Physicians continue to diagnose myocarditis in the absence of inflammatory disease of the myocardium. The clinical syndrome of cardiac insufficiency is often incorrectly labeled myocarditis.

Acute nonspecific myocarditis is an entity characterized by an acute inflammatory process in the myocardium most often secondary to some acute infectious disease. Saphir,¹ who found myocarditis in 240 of 5,626 necropsies, recommends that many sections be taken from the myocardium, since acute myocarditis may involve only small foci as well as extensive areas of the heart muscle. In those who die of an acute infectious disease the primary process frequently so dominates the pathologic picture that the discovery of myocarditis is only secondary. Cases of sudden death from acute infectious disease have incited both the clinician and the pathologist to a careful examination of the myocardium. Jaffe,² from a careful investigation of 165 cases, concluded that there is a causal relationship between myocarditis and sudden death, myocarditis having proved to be second only to perforated aortic aneurysms as the cause of sudden death. The anatomic picture in all these cases is so uniform both macroscopically and microscopically that morphologic classification is not possible. Classification in relation to the accompanying infection is valuable clinically but is unsatisfactory pathogenically.

Acute nonspecific myocarditis occurs secondary to many diseases of bacterial or virus origin and to some conditions of undetermined origin. The following incomplete list mentions conditions in which acute myocarditis has been demonstrated at necropsy: diphtheria, typhoid, paratyphoid, typhus, dysentery, mumps, pneumonia, scarlet fever, meningococcal infection, gonococcal infection, tularemia, streptococcal and pneumococcal meningitis, pyelitis, bronchiectasis, infectious

mononucleosis and acute suppurative tonsillitis. A special form of myocarditis has been reported in the literature as Fiedler's myocarditis, isolated myocarditis or fibrous myocarditis. It cannot be differentiated from other types of nonspecific myocarditis microscopically. It is classified separately because evidence of a primary disease is not demonstrable at necropsy and a primary disease was not evident clinically. This does not mean that a primary disease did not exist.

The New York Heart Association has set up criteria for the diagnosis of myocarditis.³ The diagnosis can be made correctly more frequently if it is realized that acute myocarditis is not a rare complication of infectious disease. Candel and Wheelock⁴ present a clinical study of 11 cases in which they made a diagnosis of acute nonspecific myocarditis. These cases presented the following common characteristics: (a) Each was associated with an acute infectious disease—peritonsillar abscess (1), pneumonia (2), scarlet fever (1), gonococcal arthritis (3), cystitis (1), infectious mononucleosis (1) and typhus (2). (b) Each had a rapid erythrocytic sedimentation rate even when the primary disease had abated. (c) Each showed significant electrocardiographic alterations. Diagnosis was based on physical signs and symptoms and on electrocardiographic findings. Candel and Wheelock believe that the significance of electrocardiographic abnormalities in the diagnosis of acute nonspecific myocarditis is not fully appreciated.

Evidence has been collected by the internist to show that alterations of the electrocardiogram frequently occur in the course of many acute and occasionally in chronic infectious diseases. Although these changes would be recognized as important in rheumatic disease, they are overlooked when they occur in the course of acute infectious diseases nonrheumatic in origin. In the course of acute rheumatic fever the electrocardiographic changes may return to normal. The clinical interpretation is that the pathologic process responsible for the change has resolved without leaving permanent damage to the myocardium. The same interpretation may be placed on electrocardiographic changes occurring in other acute infectious diseases. Patients whose convalescence from acute infection is slow, with profound asthenia after the acute disease has subsided, should be examined carefully for myocarditis. Slight precordial discomfort, angina pectoris and breathlessness associated with or occurring shortly after an acute infectious disease should also be regarded as indications of myocarditis. Arrhythmias and gallop rhythm should be investigated—a persistently rapid sedimentation rate after the primary infection has subsided should be regarded with suspicion. A correct appraisal of acute

1. Saphir, Otto: Myocarditis: A General Review, with an Analysis of 240 Cases, *Arch. Path.* 32: 1000 (Dec.) 1941.
2. Jaffe, Rudolf: General Considerations on Pathogenesis: Syphilitic Aortitis, Myocarditis, Hepatic Cirrhosis, *J. Lab. & Clin. Med.* 29: 139 (Feb.) 1944.

3. New York Heart Association: Nomenclature and Criteria for Diagnosis of Diseases of the Heart, ed. 4, 1942.
4. Candel, Samuel, and Wheelock, M. C.: Acute Nonspecific Myocarditis, *Ann. Int. Med.* 22: 309 (Sept.) 1945.

myocarditis is important. Scherf and Boyd⁵ assert that with the frequency of infectious diseases and miscellaneous infections there are but few persons who during a lifetime do not have inflammatory myocardial foci.

THE FUNCTION OF VITAMIN E

Since the definite claim for its existence was made about 1922, vitamin E has assumed several roles in metabolism. The first function associated with this food factor was in connection with reproduction; it prevents the resorption of fetuses in the female and testicular degeneration in the male laboratory rat maintained on a diet composed of purified food substances. Somewhat later a disease called encephalomalacia was produced in chicks restricted to a diet deficient in vitamin E. This condition appears to be associated with impairment of the blood vessels with the resultant cerebral ischemia. By this time vitamin E had been isolated and synthesized; the chemical name of alpha-tocopherol was given to it. Soon it was found that, in line with old observations in rats, paralysis could be reproduced in rabbits and in several other laboratory animals and this experimental muscular dystrophy is now recognized as still another sequel of a lack of vitamin E. Various explanations have been given to account for the foregoing observations; the tocopherols were believed to be natural protectors or antioxidants for other essential substances and to foster the integrity of the capillary walls.

As early as 1936 Martin and Moore¹ called attention to still another phenomenon of vitamin E deficiency: in rats so prepared there occurred a yellowish brown coloration of the uterus due to the collection of a pigment in the muscle of this organ. Skeletal muscle is similarly affected and here the pigmentation is associated with dystrophy.² Mason and Emmel³ have recently described the situation and the progression of the condition in considerable detail. The ovarian pigment seems to be an abnormal product of metabolism formed during cell degeneration in atretic follicles and in regressing corpora lutea. It is phagocytized by the tissue macrophages, giving rise to the abnormal coloration of the tissue. Some of the macrophages escape to the lymph nodes, spleen and liver, where the abnormal pigment is also found. The pigment, resistant to strong acids and alkalis, fat solvents and oxidizing agents, does not contain iron and has not been identified with any known biologic pigment. A determination of the chemical nature of this substance might lead to an understanding of the cellular enzyme system in which vitamin E plays an important part. Although admin-

istration of large doses of tocopherol does not cause the pigment to disappear from the ovary, the function of this organ does not appear to be disturbed by the accumulation of the pigment.

Another relationship between vitamin E and tissue pigment has been reported by Granados and Dam.⁴ In rats restricted to a ration deficient in alpha-tocopherol but containing fat, there is a progressive loss of pigment from the incisors beginning at the gingival margin. This alteration is attributed to the action of the more highly unsaturated fatty acids on the ameloblasts in the absence of vitamin E.⁵ Since tocopherol phosphate brings about a cessation of the greatly increased uptake of oxygen by muscle from an animal lacking vitamin E in the diet,⁶ a further study of the abnormal pigmentation and depigmentation described may lead to the implication of the tocopherols in some phase of the biologic oxidative systems in the body.

TROPICAL DISEASES IN THE UNITED STATES

Some diseases supposed to be peculiar to the tropics occur in parts of the United States. Once a disease is detected in an apparently new environment, it is apt to be encountered more frequently thereafter.

Few physicians were at one time aware of the prevalence of pellagra in the United States. In the early nineteen hundreds Babcock, at that time medical superintendent of the South Carolina State Hospital for the Insane, while visiting in Italy, familiarized himself with the clinical aspects of pellagra. He was convinced that the disease prevailed in the insane hospital population group of his native state, and he verified this impression. His observations attracted the attention of other psychiatrists concerned with the institutional care of the insane; eventually pellagra, especially in the Southern states, became widely recognized.

In 1909 the Rockefeller Commission, headed by Stiles, made a county by county survey of a number of Southern states and discovered the presence of uncinariasis in a large percentage of the native poor. In 1920 Symmers and Frost¹ first described granuloma inguinale in 2 native born American Negroes in Bellevue hospital, neither of whom had ever been outside the United States. Within a few years the disease had been recognized in practically every state in the Union. Much the same statement applies to lymphogranuloma venereum, which was once regarded as strictly a tropical malady whereas it is now known to be common in the United States, especially among the colored population.

5. Scherf, David, and Boyd, L. J.: *Cardiovascular Diseases*, St. Louis, C. V. Mosby Company, 1939.

1. Martin, A. J. P., and Moore, T.: *Chem. & Industry* 55: 236, 1936.

2. Martin, A. J. P., and Moore, T.: *Chem. & Industry* 57: 973, 1938.

3. Mason, K. E., and Emmel, Anne F.: *Yale J. Biol. & Med.* 17: 189 (Oct.) 1944; *Anat. Rec.* 92: 33 (May) 1945.

4. Granados, Humberto, and Dam, Henrik: *Science* 101: 250 (March 9) 1945.

5. Dam, Henrik, and Granados, Humberto: *Science* 102: 327 (Sept. 28) 1945.

6. Houchin, O. B.: *J. Biol. Chem.* 146: 313 (Dec.) 1942.

1. Symmers, Douglas, and Frost, A. D.: *Granuloma Inguinale in the United States*, *J. A. M. A.* 74: 1304 (May 8) 1920.

Parsons and Zarafonitis² have recently pointed out that "histoplasmosis for many years was believed to be a rare tropical disease" but that "during the past decade the disease has been found widespread in the United States. . . ." They recorded 9 cases originating in Michigan between November 1938 and December 1940. The disease has also been observed in Minnesota, California, Iowa, Tennessee, Ohio, Missouri, Mississippi, Maryland, Virginia, Kentucky, Florida, Indiana, Alabama, Texas, Illinois, Washington, D. C., Oklahoma, Louisiana, New York and North Carolina. In view of the fact that histoplasmosis may be easily overlooked or misinterpreted, it is within the range of probability that it is even commoner than at present suspected.

Only 9 cases of chromomycosis have thus far been recorded in this country. In nearby Cuba, on the other hand, Pardo Castello encountered 20 histologically proved cases in a period of two and one-half years and the disease is correspondingly common in Brazil and Puerto Rico. Many American dermatologists believe that it occurs more frequently in this country than published reports indicate and that it is often overlooked.

Among other tropical diseases to be reckoned with in the United States are typhus, schistosomiasis, cutaneous and visceral leishmaniasis, pinta, onchocerciasis, ancylostomiasis, maduromycosis, yaws and some of the numerous helminthiasis. These and probably others will be imported in greater or less numbers not only by returning military personnel but as a result of augmented travel by air. Of those just named, pinta and onchocerciasis are endemic in Mexico and Central America to the extent of many thousands of cases and are thus perilously close to the Texas border, while the others are none too far removed. Onchocerciasis, which is transmitted by a species of fly that infests some of the Western states, is said to display a distinct tendency to migrate northward (Johnstone and Larsen).

Tropical diseases threaten the health of the people of the United States sufficiently to warrant systematic efforts to identify and control them. American schools of medicine should provide adequate and required instruction in tropical diseases. In various seaports laboratories for the routine diagnosis and scientific investigation of these diseases, such as has been recently inaugurated by the Department of Health of the City of New York, should be established. Among other cities, Charleston, San Francisco, Baltimore and New Orleans would be admirable sites for the location of such laboratories, since, among other advantages, each of these cities could provide collaboration with existing medical schools. Doubtless also steamship companies and air lines that are engaged in the tropical trade would embrace the opportunity to participate in programs of this sort. The United Fruit Company for many years has given commendable attention to the problems in question.

Current Comment

EPIDEMIC DISEASES IN EUROPE

At the time of the collapse of Germany, typhus was widespread; more than 16,000 cases have been reported in the Shaeff area since the occupation.¹ The disease has now been practically eradicated from Germany, however, with only 6 cases recorded in the first week of August. Smallpox is now disappearing from the Iberian peninsula, where it was prevalent until recently. Plague has been potentially dangerous along the Mediterranean since the Suez Canal zone and several South American and Palestine ports became infected. The disease has appeared in Corsica, in Malta and in Taranto in southern Italy. In the latter there were 23 cases, of which 11 were fatal between September 3 and September 24. Typhoid has been unusually prevalent in Berlin since June, when 111 cases were reported. It has since reached epidemic proportions, with 382 cases in July, 1,100 in August and 1,708 during the last two weeks of September. Other areas in Germany and in Denmark have also had a high incidence of typhoid. The information regarding diphtheria is scanty, although during the last two years of the war it was the leading epidemic disease in portions of north and central Europe. In France nearly 4,000 cases were reported in June 1945. Although the information is still quite incomplete, several of these diseases are believed to be extensive in the Balkans. For example, there were still around 1,000 cases of typhus in Bosnia alone. Serious epidemics of typhoid have occurred in Albania. Stowman believes that with well planned collaboration and adequate supplies and qualified personnel it should be possible to stamp out typhus in the eastern half of Europe as has been done in the western half. Typhoid and dysentery will be harder to control under present conditions.

INFLUENZA VIRUS VACCINE

Extensive laboratory studies have been made with influenza virus vaccine by many qualified workers, and actual prophylactic trials have been observed as far as the prevailing outbreaks of influenza permit. Safety has been established and prophylactic value demonstrated within the limits of the type of infection existing at the time of making the field trial. Adequate immunity did not develop in each person treated, but the difference in the occurrence of influenza in the treated and control groups was statistically significant. How long this acquired immunity will remain with the treated person under normal living conditions can be proved only by the test of time. A number of other problems related to the antigenic coverage of the vaccine remain to be solved. Acting on the evidence at hand and with the full knowledge that this was not the complete solution, the Commission on Influenza recommended that a reserve stock of vaccine be acquired for use by the Army, if the need occurred. It was recognized that the needs of war could not wait the orderly solution of the problems still remaining. The Public Health

2. Parsons, R. J., and Zarafonitis, C. J. D.: Histoplasmosis in Man, Arch. Int. Med. 75: 1 (Jan.) 1945.

1. Stowman, Knud: Epidemic Situation in Europe, Epidemiological Inform. Bull. 1: 719 (Oct. 15) 1945.

Service concurred in this decision and through the National Institute of Health agreed to set up minimum requirements to guide the producing laboratories in the production of the vaccine and otherwise to control the product in the same manner as is done with licensed products. Because the biologics law does not lend itself to emergency interpretation, and because there remained problems of production, distribution and immunity studies which needed clarification, it was decided that influenza virus vaccine should not be recommended for license for civilian distribution at that time. In the interim the Public Health Service, through the National Institute of Health, has followed research and production developments. When the evidence became adequate to meet the minimum requirements of the biologics law and production problems had been solved, it was decided to give favorable consideration to recommending the vaccine for license if a qualified manufacturer should apply. A memorandum to this effect has been sent to producing laboratories and others directly concerned. This has been done even though it is realized that many questions still must be solved before the full range of protection afforded by this vaccine is known. In the meantime the evidence indicates that a reasonable degree of protection is developed against the type of influenza prevailing during these war years.

EFFECT OF GLUTAMIC ACID ON PETIT MAL TYPES OF EPILEPSY

The observation that grand mal attacks of epilepsy are in the majority of the cases more or less completely controlled by anticonvulsant therapy, whereas petit mal types of attack not infrequently are not influenced by medication, suggests that the trigger mechanism in the two types may not be identical. The petit mal seizures respond favorably to fasting and to a ketogenic diet. The difficulties, however, in maintaining a dietary regimen that will produce ketonuria led to a search for acidosis-producing drugs. From theoretical considerations, Waelch thought that *dl*-glutamic acid or *l*-glutamic acid should be capable of producing acidosis. Furthermore, *l*-glutamic acid is known to be metabolized by slices of brain tissue. Price and his associates¹ found that 4 Gm. of *dl*-glutamic acid administered three times daily was sufficient to maintain the p_H of the urine at about 5.0. Administration of this amino acid together with the usual anticonvulsant therapy (diphenylhydantoin-phenobarbital combination) was effective in decreasing the frequency of petit mal seizures in their patients. There was also a pronounced mental and physical alertness. Grand mal attacks were not affected by the drug. Spangler² administered glutamic acid to 6 patients subject to both grand mal and petit mal seizures and selected because their petit mal attacks were not influenced by the anticonvulsant drug therapy.

1. Price, J. C.; Waelch, H., and Putnam, T. J.: *dl*-Glutamic Acid Hydrochloride in Treatment of Petit Mal and Psychomotor Seizures, *J. A. M. A.* 122:1153 (Aug. 21) 1943.

2. Spangler, R. H.: Effect of Glutamic Acid on the Hydrogen Ion Concentration (p_H) of the Urine in Petit Mal Types of Epilepsy, *Ann. Allergy* 3:241 (July Aug.) 1945.

When glutamic acid was added to the crotalin-diphenylhydantoin-phenobarbital therapy the petit mal seizures were reduced in frequency and modified in character and severity. The effect was practically the same in all 6 patients. The amount of acid administered was guided by a daily recording of the urinary p_H in an effort to keep the hydrogen ion concentration below 5.0. The p_H of one of these patients was recorded daily for one year. The beneficial effect of glutamic acid in lowering the p_H of the urine in epilepsy, as illustrated in this case, and the fact that menstruation, even when the patient is taking glutamic acid, often causes an increase in the petit mal seizures, suggests that endocrine function may be less of a factor in the etiology of petit mal than the increase in the hydrogen ion concentration of the urine during menstruation. It is possible, Spangler believes, that petit mal seizures may result more from an altered immunologic allergic response, as shown by a decreased hydrogen ion concentration in the urine.

ACCIDENTAL SUFFOCATION OF INFANTS

Davison¹ calls attention to the fact that statistics relating to infant suffocation are misleading in that they err on the side of overestimation. During the years 1938 to 1944, 318 deaths considered as possibly due to asphyxia were reported to the coroner in Birmingham, England. Of these infants only 38 were shown to have died of asphyxia. Eighteen died from mechanical suffocation while in bed with parents or some other person, and 6 died from mechanical suffocation while sleeping alone. The remaining 280 deaths were due to natural causes, principally bronchopneumonia, often associated with otitis media. Davison stresses that a postmortem examination is indispensable as part of the routine investigation in every case in which suffocation is considered a likely cause of death. Since this procedure was adopted in Birmingham in 1929 there has been a pronounced fall in the number of deaths of infants due to suffocation.

CONTINUATION COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

Elsewhere in this issue is the semiannual listing of postgraduate continuation courses for veteran and civilian physicians prepared by the Council on Medical Education and Hospitals of the American Medical Association. These courses are offered during the period Jan. 1 to July 16, 1946. The listing is about 30 per cent longer than that for the preceding period, as a result of increased facilities, which have been developed primarily for returning medical officers. More important than mere numbers of courses is the fact that more of the courses are of longer duration, more are being offered by universities and medical schools and there is a wider geographic distribution. This expansion and improvement of offerings will greatly benefit the large number of officers seeking such work.

1. Davison, W. H.: Accidental Infant Suffocation, *Brit. M. J.* 2:251 (Aug. 23) 1945.

MEDICINE AND THE WAR

ARMY

NEW RELEASE CRITERIA FOR ARMY MEDICAL DEPARTMENT DEMOBILIZATION

The Secretary of War has announced the following criteria for the separation of nonregular Army Medical Department officers effective December 1:

A. Medical and Dental Corps Officers

Medical and Dental Corps officers are eligible for release from active duty if they meet or exceed any of the following criteria:

(1) Their adjusted service rating is 70 or they have performed forty-two months' active service.

(2) They are 48 years of age, to the nearest birthday.

(3) Exceptions to (1) are officers with primary or secondary classifications a, b or c in the following military occupational specialty categories:

a. Officers in this group will be separated with adjusted service rating of 70 or length of service forty-five months:

3105 Gastroenterology	3130 Neuropsychiatry
3107 Cardiology	3150 General surgery
3111 Urology	3306 Radiology
3112 Dermatology	3325 Pathology
3115 Anesthesia	3180 Physical therapy

b. Officers in this group will be separated with adjusted service rating score of 80 or length of service prior to Dec. 7, 1941:

3106 Ophthalmology-oto-rhinolaryngology	3139 Internal medicine
3125 Ophthalmology	3152 Plastic surgery
3126 Otorhinolaryngology	3153 Orthopedic surgery

B. Veterinary Corps Officers

Veterinary Corps officers are eligible for release from active military duty if their adjusted service rating is 70 or if they are 42 years of age to the nearest birthday or if they have performed forty-two months' active service.

C. Sanitary Corps Officers

Sanitary Corps officers are eligible for release from active military duty if their adjusted service rating is 60 or if they are 42 years of age to the nearest birthday or if they have performed forty-two months of active service.

D. Medical Administrative Corps Officers

Medical Administrative Corps officers are eligible for release from active military duty if their adjusted service rating is 60 or if they are 42 years of age or if they have performed forty-two months' active service.

E. Army Nurse Corps Officers and Physical Therapists

(1) Army Nurse Corps officers and physical therapists are eligible for release from active military duty if their adjusted service rating is 25 or if they are 30 years of age to the nearest birthday or if they have performed twenty-four months of service.

(2) Army Nurse Corps officers and physical therapists with dependent children under 14 years of age are eligible for release from active military duty.

(3) Army Nurse Corps officers and physical therapists who are married are eligible for release.

(4) Army Nurse Corps officers and physical therapists whose physical status is LUS (limited United States Service) are eligible for release.

F. Medical Department Dietitians

(1) Medical Department dietitians are eligible for release from active military duty if their adjusted service rating is 30 or if they are 35 years of age to the nearest birthday.

(2) Medical Department dietitians with dependent children under 14 years of age are eligible for release from active military duty.

(3) Medical Department dietitians who are married are eligible for release.

(4) Medical Department dietitians whose physical status is LUS (limited United States service) are eligible for release.

Definitions and Procedure

The following definitions apply:

A. Length of service as used herein includes total active commissioned and enlisted service, continuous or otherwise, since Sept. 16, 1940 and continues to accrue with the passage of time.

B. Adjusted service rating score as used herein is the score computed for each individual as of Sept. 2, 1945.

Officers who become eligible under this policy will be reported available for separation within ninety days of date of eligibility unless they have volunteered to remain in the service for any additional period of time under existing regulations or instructions. It is desired that maximum care be exercised to avoid the retention of any officer whose services are not absolutely essential to perform the assigned mission. There will be no consideration of military necessity except for those individuals retained under the provisions of section VII of War Department Circular 321, Oct. 20, 1945.

Requests for replacements will be submitted through normal channels through the Office of the Surgeon General.

Officers who are eligible for release in accordance with the foregoing criteria will be ordered to an appropriate separation center or point for processing.

Authority for separation accomplished in accordance with the Medical Department criteria will be Readjustment Regulations 1-5.

Publicity release of the criteria for Dec. 1, 1945 as listed above will be made only, repeat only, by the War Department.

DISTINGUISHED SERVICE MEDAL TO GENERAL DRAPER

Major Gen. Warren F. Draper, Assistant Surgeon General, United States Public Health Service, was recently awarded the Distinguished Service Medal. General Draper "served with conspicuous distinction as chief of the Public Health Branch, G-5 Division, Supreme Headquarters, Allied Expeditionary Force, from May 1944 to June 1945. He directed the formulation and execution of the Supreme Commander's policies governing public health in liberated nations and conquered territories.

Drawing on his many years' experience, he coordinated all resources for the prevention and control of civilian epidemics which might have interfered with military operations and successfully met tremendous problems caused by the chaotic conditions left by the war in many areas. The plans and procedures drawn up by General Draper were successful in every test. Through controlling disease in Europe, he contributed in the highest degree to the success of the Allied forces." General Draper graduated from Harvard Medical School, Boston, in 1910 and entered the service July 12, 1910.

HOLDS CONFERENCES

Medical officers of the Sixth Service Command held a conference at the John B. Murphy Memorial Auditorium of the American College of Surgeons, Chicago, November 9. Numerous papers were presented and discussed concerning technical matters affecting the profession.

A Neuropsychiatric Conference was also held under the auspices of the Sixth Service Command at the John B. Murphy

Memorial Auditorium on November 16-17. Many papers were presented on neurology, psychiatry and ancillary activities, which were open for discussion by Navy and civilian groups.

Civilian physicians were invited to attend these conferences. Both conferences were opened by Col. Don G. Hilldrup, surgeon, Sixth Service Command.

74th MEDICAL BASE DEPOT COMPANY AWARDED PLAQUE

The 74th Medical Base Depot Company was recently awarded the Meritorious Service Unit Plaque "for superior performance of duty in the accomplishment of exceptionally difficult tasks in Mindanao and the Philippine Islands." Commending the company for its immediate construction of a medical supply base and, in spite of daily heavy rains, its efficient organization and distribution of supplies, the citation concluded "wholeheartedly cooperative in spirit, united in maintaining a cheerful and enthusiastic attitude at all times, the 74th Medical Base Depot Company established an outstanding record and contributed materially to the continued success of our forces in the Southwest Pacific Area."

ARMY AWARDS AND COMMENDATIONS

Colonel John C. Fitzpatrick

The Legion of Merit was recently awarded to Col. John C. Fitzpatrick, formerly of Washington, D. C., who, the citation read, "as medical liaison officer to the chief of transportation from June 1943 to March 1945 was charged with formulating plans and developing procedures for evacuating by ship the sick and wounded from all theaters of operation to the United States. He studied current and future requirements of each theater and devised a system to meet these transportation needs on schedule. To effect proper distribution of patients on their arrival in this country, he inaugurated a system of code reporting whereby the place of residence or state of choice and the military and medical classification of all patients could be determined in advance of arrival. He solved many complex problems incident to obtaining, equipping and manning hospital ships, to furnishing adequate medical facilities for troop transports, to establishing debarkation hospitals and hospital wards and to securing kitchen cars. Owing in substantial part to his foresight and determination, several large ships were devoted almost exclusively to evacuating patients on return trips. Through his zeal for the care and comfort of the sick and wounded en route to this country, he contributed materially to maintaining their morale at a high level." Dr. Fitzpatrick graduated from Northwestern University Medical School, Chicago, in 1935 and entered the service July 1, 1936.

Lieutenant Colonel Wilmot C. Townsend

Lieut. Col. Wilmot C. Townsend, formerly of Hartford, Conn., was recently awarded the Bronze Star for meritorious service while directing the medical activities of the 81st Station Hospital. The hospital also received a meritorious service plaque for excellent work in returning 83 per cent of its patients to active duty. The especially appreciative citation accompanying the award stated that "in connection with military operations in the Mediterranean Theater of Operations from July 12, 1943 to May 8, 1945, as chief of the medical service, 81st Station Hospital, during this period, Lieutenant Colonel Townsend was responsible for the care of 7,643 patients, 83 per cent of whom were returned to duty. Because of his outstanding professional ability, his attention to duty and his personal attributes, he was a source of inspiration to his patients and his co-workers. In addition, Lieutenant Colonel Townsend was a gifted teacher, and the personal interest he displayed in the development of his junior staff members was in a great degree responsible for the superior standards of medical service throughout his unit, thereby reflecting great credit on himself and the medical corps of the Army of the United States." Dr. Townsend graduated from Harvard Medical School, Boston, in 1925 and entered the service Sept. 10, 1942.

Major Richard F. Richie

The Bronze Star was recently awarded to Major Richard F. Richie, formerly of Raleigh, N. C., for meritorious service in military operations against the enemy from Dec. 13, 1944 to May 8, 1945 in the United Kingdom, France, Belgium and Germany. The citation stated that "Major Richie as division neuropsychiatrist organized a psychologic leadership school for junior officers in the division that contributed materially in decreasing the number of psychiatric casualties incurred during combat. Through his judgment, ability and initiative many cases of exhaustion that otherwise would have been evacuated from the front were returned to duty." Dr. Richie graduated from the University of Buffalo School of Medicine in 1927 and entered the service July 11, 1942.

Lieutenant Colonel Leonard J. Hospodarsky

Lieut. Col. Leonard J. Hospodarsky, formerly of Ridgeway, Iowa, was recently awarded the Bronze Star for meritorious service in connection with military operations from January 1944 to May 1945 with the IX Engineer Command in the European theater. The citation accompanying the award states that "Lieutenant Colonel Hospodarsky's efforts produced eloquent evidence in the form of complete absence of communicable disease epidemics on the continent, the low hospital rate and the excellent general physical condition of the personnel of the command." Dr. Hospodarsky graduated from State University of Iowa College of Medicine, Iowa City, in 1931 and entered the service Aug. 18, 1941.

Major E. H. Truex Jr.

Major E. H. Truex Jr., formerly of East Hartford, Conn., was recently awarded a citation on behalf of the aural rehabilitation section of the Army's Deshon General Hospital. The citation, which was presented to Major Truex as chief of the section, was from headquarters of the Third Service Command in Baltimore for "excellent quality of work with a minimum amount of lost time and the economical use of personnel, materials and equipment" and was signed by Brig. Gen. T. B. Catron. Major Truex heads the rehabilitation for the hard of hearing and deafened section at Deshon General Hospital. He graduated from Harvard Medical School, Boston, in 1936 and entered the service Sept. 10, 1942.

Lieutenant Colonel Fred P. Long

Lieut. Col. Fred P. Long, formerly of North Platte, Neb., was recently awarded the Bronze Star for meritorious service and noteworthy performance of duty as malariologist at Guadalcanal. The citation commended his wide knowledge of insect control; and his efficient utilization of the troops and the materials at his disposal were reflected in the remarkable reduction in the incidence of malaria and other insect borne diseases. Dr. Long graduated from the University of Tennessee College of Medicine, Memphis, in 1930 and entered the service Oct. 27, 1941.

Major Early B. Lokey Jr.

The Bronze Star was recently awarded to Major Early B. Lokey Jr., formerly of Hattiesburg, Miss., for meritorious achievement on Leyte and Okinawa. He participated in both campaigns as regimental surgeon with the 382d Infantry. Dr. Lokey graduated from Tulane University of Louisiana School of Medicine, New Orleans, in 1941 and entered the service July 1, 1942.

Lieutenant Colonel Timothy Mullen

Lieut. Col. Timothy Mullen, formerly of Seneca, Ill., was recently awarded the Bronze Star for meritorious service in support of military operations against the enemy in northern Luzon and the Philippines from Feb. 15, 1945 to May 10, 1945. Dr. Mullen graduated from the University of Illinois College of Medicine, Chicago, in 1927 and entered the service March 5, 1941.

Captain Elwood O. Horne

Capt. Elwood O. Horne, formerly of Shrewsbury, Mass., was recently awarded the Bronze Star, the Purple Heart and the Silver Star. Dr. Horne graduated from Tufts College Medical School, Boston, in 1936 and entered the service May 21, 1943.

VETERANS

VETERANS REHABILITATION CLINIC OF THE PRESBYTERIAN HOSPITAL

A rehabilitation clinic for veterans was opened at the Columbia-Presbyterian Medical Center, New York, to be known as the Veterans Rehabilitation Clinic of the Presbyterian Hospital. The clinic held its first session November 7 and has held weekly sessions since that time.

All services will be offered to veterans free of charge. The clinic plans to treat those types of neuropsychiatric problems in which a relatively short term psychotherapeutic approach can reasonably be expected to be of decided benefit to the patient. Cases will be referred to the clinic by various government and community agencies dealing with the veteran, and in addition it is anticipated that some veterans will refer themselves directly to the clinic.

The clinic is staffed by twelve neuropsychiatrists, but as the need arises this number will be increased. Consultations will be available with members of the medical staff in an effort to treat organic as well as functional diseases. All of the laboratory facilities of the medical center will be available for these patients. Clinical psychologists will carry out various personality and aptitude studies. Occupational therapy will be

directed by a therapist specially trained in rehabilitation work. Since the ultimate goal of the clinic is to help the veteran to become an active functioning member of the community once more, a committee of laymen is being formed to cooperate with the clinic in problems of employment. This committee will be made up of representatives of various types of industry and business and will work in close cooperation with the clinic.

VETERANS' ADMINISTRATION PLANS FOR WAR AMPUTEES

Services for war amputees, a subject which has come to national attention since the House Subcommittee on Aid to the Physically Handicapped disclosed the inadequate facilities currently available, was reviewed before the subcommittee again on November 20, when Major Gen. Paul R. Hawley, former chief surgeon in the European Theater of Operations and now acting surgeon general of the Veterans Administration, appeared as a witness. General Hawley presented the plans of the Veterans Administration for improving services to the boys who lost limbs in battle.

NAVY

NAVY REDUCES VISION STANDARDS

Under new standards approved by the Secretary of the Navy, Naval Academy candidates with a slight degree of myopia may be considered for acceptance if they still have 20/20 vision in each eye. Minimum vision required of line candidates for commission in the regular Navy is now 15/20 in each eye correctable to 20/20; for staff corps candidates and officers assigned to engineering duty only and to other specialized duty, 8/20 in each eye correctable to 20/20. Previously, requirements for commission in the line were 18/20 in each eye correctable to 20/20, and for staff corps officers 12/20 in each eye correctable to 20/20. Any degree of myopia or myopic astigmatism formerly disqualified a candidate for the Naval Academy. New standards were decided on after careful study and with particular consideration for the excellent record of accomplishment during the war by officers and enlisted personnel who had a moderate degree of visual refractive error.

CAPT. WINCHELL McKENDREE CRAIG NOMINATED REAR ADMIRAL

Capt. Winchell McKendree Craig, veteran of two wars and chief of surgery at the naval hospital in Bethesda, Md., was recently nominated to the rank of rear admiral, the first time in the history of the Navy that a medical corps reserve officer has been nominated to that rank. In World War I Captain Craig served in the Army as acting war medical officer at the base hospital, Fort George G. Meade. He entered the Navy after Pearl Harbor as a commander and in 1943 was awarded the Medical Reserve Medal with bronze star for twenty years as a medical reserve officer. Dr. Craig is the inventor of the Craig headrest, a device which has proved invaluable in speeding up brain surgery in World War II. He graduated from Johns Hopkins University School of Medicine, Baltimore, in 1919.

NAVY AWARDS AND COMMENDATIONS

Captain Charles W. Shilling

A Letter of Commendation was recently presented to Capt. Charles W. Shilling, formerly of New London, Conn. The citation accompanying the award read "For outstanding achievement in the line of duty as submarine medical examiner and officer in charge of the medical research department from September 1938 to August 1945. Captain Shilling, by his diligence and foresight in planning and his outstanding ability in the scientific research field, developed a program that greatly aided

submarine warfare. In establishing and maintaining liaison between governmental agencies, civilian educational and scientific groups, foreign research groups and the United States Army Research Group, Captain Shilling by untiring zeal and ability has been able to secure results of the highest value to the Navy. Captain Shilling's successful accomplishment in the research and scientific field reflects great credit on himself and the United States Naval Service." Dr. Shilling graduated from the University of Michigan Medical School, Ann Arbor, in 1927 and entered the service July 28, 1927.

Lieutenant Richard Lawrence Merkel

The Air Medal was recently awarded to Lieut. Richard Lawrence Merkel, formerly of Freeport, Ill., "for meritorious achievement in aerial flight as flight surgeon, Air Group 32, attached to the U. S. S. *Langley*, during operations in the enemy Japanese held Marshall, Caroline and Philippine Islands areas, from Jan. 29 to Sept. 23, 1944. Participating in numerous strikes and flights during this period, Lieutenant Merkel rendered gallant service and by his professional skill and courageous devotion to duty in the face of grave hazards contributed essentially to the maintenance of high morale in his air group and to the successful fulfillment of these vital missions. His and to the successful fulfillment of these vital missions. His exemplary conduct and fearless disregard for his own personal safety reflect the highest credit on Lieutenant Merkel and the United States Naval Service." Dr. Merkel graduated from Loyola University School of Medicine, Chicago, in 1942 and entered the service Dec. 22, 1942.

Commander W. Stuart Henderson

Comdr. W. Stuart Henderson, formerly of Akron, Ohio, was recently awarded the Navy's commendation ribbon for "high professional skill and initiative" in treating the wounded aboard Gen. Douglas MacArthur's command ship, the U. S. S. *Nashville*, which lost 133 men killed and 190 wounded through the attack of a Jap suicide plane. Dr. Henderson graduated from the University of Toronto Faculty of Medicine in 1923 and entered the service Dec. 17, 1942.

Commander John F. Oakley

Comdr. John F. Oakley, formerly of New Orleans, was recently awarded the Navy and Marine Corps Medal for heroism in action against the enemy on Saipan and Tinian during which, on several occasions, he continued to operate in an unprotected surgery despite fire and air raid alerts, after other patients removed to places of relative safety. Dr. Oakley graduated from Tulane University of Louisiana School of Medicine, New Orleans, in 1929 and entered the service Sept. 26, 1942.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Fonde, William G., Capt., 301 Northwest Blvd., Chickasaw.
Holmes, Michael, Lt. Col., Abbeville.
Johnson, Simon O., Major, Veterans Adm., Tuskegee.
Rodriguez, Jose M., Capt., Louisville.

Arizona

Nugent, Arthur G., 1st Lt., 1024 9th St., Douglas.
Thayer, Kent H., Major, 808 Prof. Bldg., Phoenix.

Arkansas

Alford, Thomas D., Capt., 200 Midland Ave., Little Rock.
Brizzolara, Charles M., Capt., 217 E. 6th St., Little Rock.
Parsons, Wilfred R., Capt., 1620 Gaines St., Little Rock.

California

Batten, Charles T. Jr., Major, Camarillo State Hosp., Camarillo.
Brown, John W., Major, 1248 Arguello, San Francisco.
Carlson, Carl O., Capt., 511 Rutland St., San Jose.
Chain, John S., Major, 2220 E St., Eureka.
Cleave, David C., Lt. Col., P. O. Bldg., Beach Rd., Belvedere.
Cressman, Ralph D., Major, 386 Dana Ave., Palo Alto.
Danstrom, John R., Capt., 4220 Cedar Ave., Long Beach.
Darling, Herbert H., Lt. Col., 90 Woodland Ave., San Francisco.
Denicke, Ernest W., Major, 1010 B St., San Rafael.
Ehrlich, Alfred S., Capt., 9157 Alden Dr., Beverly Hills.
Fagan, Shuler F., Major, 1930 Wilshire Blvd., Los Angeles.
Freyermuth, Otto G. Jr., Capt., 35 Aptos Ave., San Francisco.
Geen, Robert S., Lt. Col., 3934 Greenwood Ave., Oakland.
Henning, Berthel H., Lt. Col., 71 Lopez Ave., San Francisco.
Heppner, George J., Capt., 450 Sutter, San Francisco.
Hfeld, Frederick W., Major, 1930 Wilshire Blvd., Los Angeles.
Jacobs, Joseph J., Lt. Col., 1478 38th Ave., San Francisco.
Kistler, Lewis M., Major, 1046 S. Wilton Pl., Los Angeles.
Kloss, Richard G., Lt. Col., 2623 Regent St., Berkeley.
Leimbach, John H. Jr., Capt., 728 22d St., San Francisco.
Mack, Edward G., Capt., 9615 Brighton Way, Beverly Hills.
Martin, Walter P., Capt., 5147 10th Ave., Los Angeles.
Masler, Sherman, Major, 4524 Sylmar, Van Nuys.
Maytum, Harry R., Major, 229 18th St., Merced.
Mell, Charles N., Major, 411 30th St., Oakland.
Mock, Duane V., 1st Lt., Orange County Hosp., Orange.
Moore, Herbert L., Capt., 935 B St., Eureka.
Novick, William, Capt., 650 S. Cochran Ave., Los Angeles.
Nuyens, Louis C., Capt., 184 Ewing Terrace, San Francisco.
Osborne, Clyde J., Capt., 3660 28th St., San Diego.
Parker, James A., Capt., 615 L St., Merced.
Perlmutter, Henry A., Major, 2223 Channing Way, Berkeley.
Perry, William J., Major, 441 Salem St., Chico.
Pratt, John R., Capt., 8426 Ridpath Dr., Los Angeles.
Pucci, Ugo J., Capt., 1729 8th Ave., Sacramento.
Robinson, Louis L., Major, 1010 B St., San Rafael.
Roe, William F., 1st Lt., 2628 Armstrong Ave., Los Angeles.
Rustad, William H., Capt., 490 Post, San Francisco.
Smart, Bret W., Major, 281 Juanita Way, San Francisco.
Starr, Wilmer H., Capt., 1342 34 N. Edgemont, Hollywood.
Tainter, Eugene G., Capt., 2361 California, San Francisco.
Thale, H. B., Capt., L. A. County GH, Box 257, Los Angeles.

Colorado

Bramley, John G., Capt., 2051 Elm St., Denver.
Forbes, Burton L., Capt., 1306 Humboldt St., Denver.
Kuykendall, Fred D., Capt., Eaton.
Lefevre, Harry W. Jr., Lt. Col., 2034 Dahlia, Denver.
Olsen, Frank R., Capt., Box 162, Center.

Connecticut

Adams, Arthur J., Capt., 839 Williams St., Bridgeport.
Berlowe, Max L., Capt., 35 Stimson Rd., New Haven.
Goldstein, Emanuel, Capt., Municipal Hosp., Hartford.
Josephs, William W., Major, 105 Dwight St., New Haven.
Lieberman, David L., Capt., Chester.
McGuire, Frank J., 1st Lt., 29 Whitfield St., Guilford.
Maisten, Sidney E., Major, 415 Woodland St., Hartford.
Massey, Daniel M., Capt., 1025 Noble Ave., Bridgeport.
Murphy, John C., Major, Infield, Redding.
O'Connell, Edward B., Capt., 8 9th St., Derby.
Schneider, William, Capt., 34 Union St., Rockville.
Serrell, Howard P., Major, Taconic Rd., Greenwich.
Thorne, Lewis, Major, 109 College St., New Haven.

District of Columbia

Bukantz, Samuel C., Capt., 1020 19th St. N.W., Washington.
Suttenfield, F. D., Lt. Col., 1818 R St. N.W., Washington.

Florida

Chunn, Charles F., Major, 2416 Watrous Ave., Tampa.
Harmon, James P., Major, Box 568, Quincy.
Jennings, W. L., Capt., 807 N. Atlantic Ave., Daytona Beach.
McTurnan, Robert W., Capt., Tampa Municipal Hosp., Tampa.
Saslaw, Milton S., Major, 1238 S. W. 8th St., Miami.

Georgia

Dowman, Charles E., Major, 630 Linwood Ave. N.E., Atlanta.
Gavin, James F., Major, Fort Gaines.
Norwood, S. W., 1st Lt., 1761 Westwood Ave. S.W., Atlanta.
Trimble, George X., Capt., Grady Hosp., Atlanta.

Idaho

Hancher, William H., Capt., Weiser.
Scott, Russell T., Major, Lewiston.
Smith, Robert S., Lt. Col., 1221 Harrison Blvd., Boise.
Stowe, Harwood L., Major, 125 Lincoln St., Twin Falls.

Illinois

Adler, Samuel, Capt., 302 S. 3d St., Oregon.
Allen, Harvey S., Lt. Col., 174 E. Pearson St., Chicago.
Armstrong, Robert B., Capt., 1935 Oxford St., Rockford.
Barnes, Gareth B., Capt., 104 N. Commonwealth Ave., Elgin.
Bates, Alvin F., Capt., 3849 Addison St., Chicago.
Benkendorf, Richard C., Capt., 1020 Washington, Bushnell.
Berger, Earl R., Capt., 432 Belmont Ave., Chicago.
Berman, Alex M., 1st Lt., 1375 Greenleaf Ave., Chicago.
Bertucci, Joseph A., Capt., 4929 W. Rice St., Chicago.
Bolton, William W., Capt., 530 Washington Ave., Wilmette.
Brobst, Charles D., Capt., 427 S. Lincoln Ave., Aurora.
Brown, King D., Major, 5501 Prairie Ave., Chicago.
Castaldo, Enzo F., Lt. Col., 953 N. St. Louis Ave., Chicago.
Cohrs, Clarence C., Capt., 182 E. 154th St., Harvey.
Costin, Max, Capt., 5841 Maryland Ave., Chicago.
Curtis, George H., Capt., 656 Wrightwood, Chicago.
DeLeon, Fernando, Capt., RFD 3, Palantine.
Deuterman, Joel L., Col., Pelton Clinic, 102 N. Spring St., Elgin.
Dorris, Victor M., Capt., 1850 W. Jackson, Chicago.
Fahrner, George V., Capt., 809 Douglas St., Joliet.
Fairbairn, James P., 1st Lt., 503 W. 117th St., Chicago.
Fitzgerald, Maurice D., Capt., 5646 Sheridan Rd., Chicago.
Fort, Richard G., Major, 820 Mulford St., Evanston.
France, John T., Capt., Findlay.
Freedman, Bernard S., Capt., 1727 W. Albion St., Chicago.
Friedman, Louis B., Capt., 6424 S. Central Ave., Chicago.
Garnello, John M., Capt., 2621 W. 61st St., Chicago.
Garrick, Samuel, Capt., 4140 S. Halsted St., Chicago.
Gertz, George J. D., Capt., 5134 S. Harper Ave., Chicago.
Greenberg, Leo J., Major, 5238 Drexel Ave., Chicago.
Greene, Earle I., Lt. Col., 524 Melrose St., Chicago.
Griffith, Paul R., Capt., 6804 Windsor Ave., Berwyn.
Headland, Paul B., Major, 9246 S. Damen Ave., Chicago.
Hoebel, Frederick C., Capt., 303 E. Superior St., Chicago.
Jackson, Edward L., 1st Lt., 1640 W. Adams St., Chicago.
James, David E., Major, 616 E. 2d St., Belvidere.
Jurgens, Johannes J., Capt., 4432 N. Francisco Ave., Chicago.
Kallal, Thomas E., Capt., 1332 S. Austin Blvd., Cicero.
Kalom, Lawrence, Capt., 3600 Roosevelt Rd., Chicago.
Kram, David D., Lt. Col., 104 S. Michigan Ave., Chicago.
Kramer, Charles F., 1st Lt., 2010 E. 77th St., Chicago.
Krieger, Leslie W., 1st Lt., McHenry.
Kroulik, William J., Capt., Berwyn.
Laden, Edward L., Capt., 4612 Greenwood Ave., Chicago.
Lees, William M., Capt., 955 N. Hoyne Ave., Chicago.
Link, G. S., Capt., Presby. Hosp., 1753 Congress St., Chicago.
Lockhart, Edmund S., Major, 105 1/2 W. State St., Nokomis.
Loeppert, William A., Major, 1737 N. Nagle, Chicago.
McCulley, Robert L., Capt., Pecatonica.
McEwen, Ernest G., Major, 1703 Chicago Ave., Evanston.
Miller, Howard R., Major, 206 Biltmore, Peoria.
Moisant, Bernard E., Capt., 809 Zeigler, Aurora.
Munson, Frederick W., Major, 145 W. Bluff, Streator.
Nelson, Bertram G., Major, 5632 Kenwood Ave., Chicago.
O'Brien, George F., Lt. Col., 7312 Ridgeland Ave., Chicago.
Okner, Henry B., Capt., 4221 W. Jackson Blvd., Chicago.
Olsson, Roland C. O., Capt., 29 W. 111th St., Chicago.
Parker, Charles D., Capt., 1243 N. Ashland Ave., River Forest.
Quint, Harold A., Major, 2444 Hartrey Ave., Evanston.
Rand, George L., Lt. Col., 2630 E. 75th St., Chicago.
Rattner, Bernard, Capt., 6500 W. Lyring Park Rd., Chicago.
Regnier, Walter O., Major, Arminington.
Resnick, Carl H., Capt., 6305 W. Grand Ave., Chicago.

PHYSICIANS SEPARATED FROM SERVICE

J. A. M. A.
Dec. 8, 1945

Illinois—Continued

Roark, Samuel P., Capt., 475 Jackson St., Bushnell.
Rubovits, Frank M. Jr., Capt., 5480 Cornell Ave., Chicago.
Ruda, Joseph M., Capt., 4140 W. 57th Pl., Chicago.
Sandberg, Kurt H., Capt., Stewardson.
Schurmeier, Frederick A., Capt., 1023 N. Spring St., Elgin.
Schwartz, Martin L., Capt., 2144 Spruce St., Murphysboro.
Scott, Dale F., Capt., 212 W. 12th St., Sterling.
Seed, Lindon, Lt. Col., 923 N. Elmwood Ave., Oak Park.
Spicer, Donald D., Major, 210 E. Wood St., Paris.
Sykora, Lawrence J., Capt., 1930 S. Highland Ave., Berwyn.
Terone, Henry M., Capt., 1734 W. 34th St., Chicago.
Thomas, Edward W., Capt., 127 Briggs St., Roodhouse.
Vertuno, John W., Capt., 1002 N. 11th Ave., Melrose Park.
Zmugg, Andrew J., Capt., 226 S. Randall Ave., Aurora.

Indiana

Bennett, Paul E., Capt., Dillsboro.
Cheney, Frederick D., Lt. Col., 5032 Graceland, Indianapolis.
Dyer, Wallace K., Major, 602 S.E. Riverside Dr., Evansville.
Elliott, Ralph A., Capt., 1514 W. 5th Ave., Gary.
Episcopo, Arsenius R., Capt., Mitchell.
Faussett, Calvin B., Major, 432 W. Maple Rd., Indianapolis.
Fitzgerald, Brice E., Lt. Col., 3020 N. Illinois St., Indianapolis.
Flora, Joseph O., Major, 4317 W. Washington St., Indianapolis.
Glock, Wayne R., Major, 921 W. Lexington Ave., Fort Wayne.
Hitch, Oliver M., 1st Lt., 310 S. Prince St., Princeton.
Koehler, Elmer G., Capt., 1304 Greenleaf Blvd., Elkhart.
Lehmberg, Otto F. C., Capt., 118 E. Van Buren, Columbia City.
Mantz, Theodore P., Capt., 3541 N. Meridian, Indianapolis.
Parker, John F., Capt., 5143 Pleasant Run Pkwy., Indianapolis.
Ramage, Walter F., Capt., 2316 N. Penn St., Indianapolis.
Sandoz, Harry H., Capt., 239 Hawthorne Dr., South Bend.
Schuknecht, Harold F., Capt., 406 Niles Ave., Mishawaka.
Torrella, Jose A., Capt., 4918 W. 14th St., Indianapolis.

Iowa

Barnes, Bernard C., Major, 4910 Pleasant St., Des Moines.
Beatty, Howard G., Capt., 1000 N. Sycamore St., Creston.
Carpenter, Ralph C., Capt., 1201 W. State, Marshalltown.
Clark, George E. Jr., Capt., 1307 42d St., Des Moines.
Fee, Charles H., Major, Denison.
Flater, Norman C., Capt., Box 83, Floyd.
Griffin, Robert E., Major, Cobb Apts, Sheldon.
Hickerson, Luther C., Capt., Brooklyn.
Hoyt, Charles N., Capt., 302½ Main St., Cedar Falls.
Limbirt, E. M., Major, 431 Huntington Ave., Council Bluffs.
McGreevey, James E., 1st Lt., Iowa City.
Moehn, John T., Capt., 1522 N. Adams St., Carroll.
Morrison, John R., Major, 703 N. Court St., Carroll.
Nierling, Paul A., Capt., 721 W. 2d St., Cresco.
Rhombert, Edward B., Capt., Guttenberg.
Richmond, Paul C., Major, New Hampton.
Schaeferle, Martin J., Capt., Osage.
Stickler, Robert B., Major, Udell.
Throckmorton, James F., Major, 1149 23d St., Des Moines.

Kansas

Epp, Frederic O., Capt., 3201 W. Douglas Ave., Wichita.
Gray, David E., Capt., 421 Huntoon St., Topeka.
Jones, Hiram P., Capt., 107 E. 8th St., Lawrence.
Minnick, Charles V., Capt., 435 W. Chestnut, Junction City.
Seuka, Clayton L., Capt., Sedgewick County Hosp., Wichita.
Sereres, Edgar P., Capt., 215 Delaware St., Hiawatha.
Speer, Louis N., Capt., 610 12th St., Osawatimie.
Stafford, George E., Capt., 800 S. 11th, Salina.
Sterling, Robert, Lt. Col., 1129 Louisiana St., Lawrence.
Vilmer, Charles E., Capt., 209 E. Monroe St., Pittsburg.

Kentucky

Boeh, Daniel H., Capt., 96 Four Mile Rd., Silver Grove.
Carrigg, Lawrence G., Major, 1341 State St., Bowling Green.
Dodson, Leslie C., Major, 2431 Allen St., Owensboro.
Flax, Moses, Capt., Paintsville.
Garred, Mathew D., Major, 820 Rogers St., Ashland.
Gettelfinger, Ralph A., Capt., 1475 Texas, Louisville.
Jackson, Vester A., Major, Clinton.
Kabaker, Charles B., Capt., 361 S. Broadway, Lexington.
Moorman, Chapman S., Capt., 800-2 Brown Bldg., Louisville.
Parker, Harold N., Major, Edgemont Rd., Maysville.
Perry, Claud W. Jr., Capt., 192 Coral Ave., Louisville.
Pigman, Alger B., Capt., Hindman.
Robertson, Robert W., Major, 2850 Broadway, Paducah.
Stites, John, Major, 2113 Village Dr., Louisville.

Kentucky—Continued

Stone, Harry J., Capt., 13th & Blackburn Ave., Ashland.
Sublett, Daniel V., Major, 743 Cooper Dr., Lexington.
Tatum, Joseph C., Major, Veterans Hosp., Lexington.
White, George A., Capt., 982 Eastern Parkway, Louisville.

Louisiana

Blitz, Oscar, Col., 2103 Gen. Taylor St., New Orleans.
Cohen, Joseph, Lt. Col., 241 Audubon Blvd., New Orleans.
Collins, Conrad G., Major, 1423 State St., New Orleans.
Eigenbrod, F. A., Major, 4503 Prytania St., New Orleans.
Gengelbach, Robert D., Capt., RFD Forest Hills, Pineville.
Genovese, Charles R., Capt., Independence.
Hendrick, John A., Capt., 4740 Fairfield Ave., Shreveport.
Hopkins, George S., Major, Lake Providence.
Lhotka, Frank M., Capt., 1619 General Pershing St.
Lieppman, Jack E., Capt., Shreveport Charity Hosp., Shreveport.
McCabe, James S., Major, Charity Hosp., New Orleans.
Moore, Jeff C. Jr., Capt., 100 Melody Dr., Metairie.
Morgan, Stanley E., Capt., 732 Pelican Ave., New Orleans.
Phillips, James R., Lt. Col., 500 Reymond Bldg., Baton Rouge.
Price, Vivian H., Major, Shreveport Charity Hosp., Shreveport.
Schudmak, Melvin A., Lt. Col., White Castle.
Thomas, George E., Major, University Hosp., University.
Tomskey, Gilbert C., Capt., 3715 Prytania St., New Orleans.
Whitfield, Frederick S., Capt., Columbia.

Maine

Donahue, Gerald H., Major, 30 Mechanic St., Presque Isle.

Maryland

Gramse, Fred R., Capt., 508 Camden Ave., Salisbury.
Lemkau, Paul V., Lt. Col., 533 N. Wolfe St., Baltimore.

Massachusetts

Abrahms, Edward T., Capt., 311 North St., Pittsfield.
Abriel, Albert G., Capt., Medford.
Allman, Sydney J., Capt., 611 River St., Mattapan.
Alpers, Nathan, Capt., 22 Summit Ave., Salem.
Amerena, John P., Capt., 54 Payson Ave., Rockland.
Appleford, George B., Capt., 549 Osgood St., North Andover.
Bachrach, Samuel, Major, 6 Moore Ave., Worcester.
Bailey, Karl R., Col., 29 Lakeville Pl., Jamaica Plains.
Bassow, Carlton F., Capt., 96 Ridge Ave., Athol.
Bond, Douglas D., Major, Harvard Med. School, Boston.
Botsford, Thomas W., Major, 721 Huntington Ave., Boston.
Broady, Harold, Capt., 53 Loring St., Lowell.
Bruce, James G., Major, 20 Maple St., Springfield.
Budnitz, Edward, Capt., 356 Salisbury St., Worcester.
Chadwell, Kenneth J., Capt., 26 Lexington Circle, Swampscott.
Creese, Philip G., 1st Lt., 93 Binney St., Boston.
Dawson, George A., 1st Lt., 16 Granite St., Methuen.
Deutsch, Emmanuel, Capt., 406 Marboro, Boston.
Donaghy, George E., Major, 175 Dartmouth St., Boston.
Dove, David, Capt., South Sudbury.
Ellas, Anthony N., Major, 98 E. Water St., Taunton.
Fisher, Robert M., Capt., 25 Esmond St., Dorchester.
Fritz, Lewis E., Capt., 34 Park St., Stoughton.
George, Alden B., Capt., 34 Commonwealth Ave., Haverhill.
Ginsberg, David, 1st Lt., 505 Armory St., Springfield.
Goldenberg, Harry, Major, 85 College Ave., Somerville.
Gundersen, Trygve, Major, 123 High St., Brookline.
Hadler, Arthur J., Capt., L. I. Hosp., Boston.
Harken, Dwight E., Lt. Col., 171 Bay State Rd., Boston.
Hays, Robert A., Capt., 115 Ellison Park, Waltham.
Hills, Henry M. Jr., Capt., 14 Autumn St., Boston.
Kane, Francis C., Capt., 7 Meadow St., Salem.
Katz, Morris E., Capt., 188 South St., Athol.
Kaufman, Moses R., Lt. Col., 253 Marsh St., Belmont.
Keleher, Paul C., Major, 48 Pleasant St., Woburn.
Kelly, Francis J., Capt., 84 June St., Worcester.
Knox, Barron D., Major, 158 N. Pleasant St., Holyoke.
Lingley, James R., Lt. Col., 115 Summit Ave., Wollaston.
Luongo, Michael A., Capt., 73 Gladstone St. E., Boston.
McClusky, Donald K., Major, 332 Main St., Worcester.
Mahoney, Alfred V., Capt., 70 Victoria Rd., Quincy.
McKittrick, John B., Capt., 125 Myrtle St., Boston.
Migliore, Joseph O., Capt., 842 Salem St., Malden.
Morrison, Jonathan I., Major, 89 Evelyn Rd., Waban (Newton).
Morse, Frank P. Jr., Major, 389 Essex St., Salem.
Nathanson, Seymour I., Capt., 134 Summer St., Fitchburg.
Parton, George P. Jr., Capt., 153 Brook St., Wellesley.
Pearson, Robert W., Capt., 15 Perkins Manor, Perkins St., Jamaica Plain.

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts—Continued

Rodman, Max H., Capt., 17 Evelyn St., Mattapan.
Rosen, Daniel, Capt., 66 Columbia Rd., Roxbury.
Rottenberg, Louis A., Capt., 132 Clark Rd., Brookline.
Sapienza, Joseph A., Capt., 12 E. Haverhill, Lawrence.
Selesnick, Sydney, Lt. Col., 666 Adams St., Milton.
Shannon, Edward T., Capt., 44 Conant St., Fall River.
Short, Charles L., Major, 12 Glen Ave., Newton Center.
Sinish, Kenneth W., Capt., 63 Wentworth Rd., Melrose.
Skelton, Alton B., Major, 135 Front St., Winchenden.
Stellar, Stanley, Major, 30 Hatherly Rd., Brighton.
Stewart, Donald M., Major, 194 Clifton St., Malden.
Strachan, Harry L., Jr., Major, 260 Rimmer Ave., Springfield.
Sullivan, Thomas H., Capt., 78 Grant St., Fall River.
Taylor, Richard C., Major, South Rd., Spencer.
Thorndike, William T. S., Major, Mass. Gen. Hosp., Boston.
Van Huysen, William T., Capt., Weston.
Wolk, Eliot, Major, 795 Blue Hill Ave., Boston.
Wyman, Stanley M., Capt., 23 Fayette St., Cambridge.

Michigan

Bailey, John H., Capt., 233 E. Willis St., Detroit.
Benedict, Arthur L., Capt., 621 Maffett St., Muskegon.
Bennett, Keith F., Lt. Col., 907 Nat'l Bank Bldg., Kalamazoo.
Bicknell, Frank B., Major, Hotel Stadler, Detroit.
Binkley, Edward L., Jr., Capt., 1910 Delaware, 210, Detroit.
Childs, George M., Capt., 93 Seward, Detroit.
Clark, William E., Major, 809 E. Ash, Mason.
Conn, Harold, Capt., 7522 John R St., Detroit.
Cooper, Ralph R., Major, 418 N. Division, Ann Arbor.
Cortopassi, Vital E., Capt., 822 Sheridan Ave., Saginaw.
Croushore, James E., Major, 2045 Edison Ave., Detroit.
Curlless, Grant R., Capt., 135 College St., Battle Creek.
De Groat, Albert, Lt. Col., 1551 David Whitney Bldg., Detroit.
Deresz, Alphonse R., Capt., 8040 Curt Ave., Detroit.
Dixon, Ralph C., Capt., 27 E. Willis Ave., Detroit.
Donald, Douglas, Lt. Col., 8110 St. Paul Ave., Detroit.
Drolett, Lawrence A., Capt., 228 S. Jenison, Lansing.
Ellis, Calvin C., Major, 1356 Delaware St., Detroit.
Ellis, Seth W., Major, 2516 Longfellow Ave., Detroit.
Failing, John F., Capt., 2617 Lake Michigan Dr., Grand Rapids.
Farrior, Joseph B., Major, University Hosp., Ann Arbor.
Flick, Earl J., Capt., 611 N. Center, Royal Oak.
Forsythe, John R., Major, 20526 Grand River Ave., Detroit.
Fyvie, James H., Major, 210 Range St., Manistique.
Gibson, Thomas E., Major, 1218 Cawood St., Lansing.
Gutow, Benjamin R., Major, 3404 Longfellow Ave., Detroit.
Gutow, Julius J., Capt., 5623½ S. Saginaw, Flint.
Hall, George C., Major, 121 N. Scott, Adrian.
Hanson, Frederick N., Major, Box 57, Elise.
Hasty, Willis A., Capt., Gobles.
Heidenreich, John R., Major, Daggett.
Herbert, Walter N., Capt., 207 S. Main St., Yale.
Hoekman, Aben, Capt., 460 Prospect, Constantine.
Ivkovich, Paul, Major, 447 W. Upton Ave., Reed City.
Jameson, F. M., Capt., 145 Woodward Lane S.E., Grand Rapids.
Kapfita, Walter A., Capt., 5087 Caniff Ave., Detroit.
Klerk, William J., Capt., 708 Homecrest, Kalamazoo.
Knobloch, Howard T., Capt., 221 N. Lincoln, Bay City.
Kolb, Frederick E., Capt., Lake Linden.
Koon, William D., Capt., Butterworth Hosp., Grand Rapids.
Koss, Frank R., Capt., 136 S. Waverly, Dearborn.
Krass, Edward W., Lt. Col., 11088 Gratiot Ave., Detroit.
Lemire, Donald F., Capt., Hurley Hosp., Flint.
Lewis, J. Hugh, Lt. Col., 214 Superior Blvd., Wyandotte.
Low, Stanley T., Capt., RFD 2, Box 60, Battle Creek.
McLaughlin, Nicholas D., Capt., 2062 22d St., Wyandotte.
Mark, Jerome, Capt., 3295 Glendale, Detroit.
Marrin, M. M., Jr., Lt. Col., 2291 Marywood, Grand Rapids.
Miller, Edwin C., Major, 812 N. Grant St., Bay City.
Miller, Phillip L., Capt., 1706 John St., Muskegon.
Moleski, Leo T., Capt., Oakwood Manor, Grand Rapids.
Moore, Donald F., Major, Box A, Ypsilanti.
Moore, Neal R., Capt., 2140 5th Ave., Bay City.
Palmer, Alger A., Capt., 110 Middle St., Chelsea.
Pelletier, Charles J., Capt., 20057 Keating Ave., Detroit.
Pfeffer, Isadore S., Capt., Wm. J. Seymour Hosp., Eloise.
Pleume, Russell E., Capt., 219 Blanche St., Houghton.
Schrier, Christian F., Capt., 109 Chippewa St., Pontiac.
Schrier, Thomas, Capt., 3313 Price Ave., Comstock.
Scovill, Henry A., Major, 125 Ellen St., Union City.
Scully, Raymond E., Capt., 2011 Francis St. S.E., Grand Rapids.
Sheldon, John M., Lt. Col., University Hosp., Ann Arbor.
Shewalter, Lawrence E., Major, 611 E. Division, Cadillac.
Snyder, Leopold J., Capt., 45 Farrand Park, Detroit.

Michigan—Continued

Sparling, Harold I., Capt., 251 E. Main St., Northville.
Spencer, Lloyd H., Major, Detroit.
Steinhardt, Milton J., Capt., 19135 Sorrento, Detroit.
Stocker, Lawrence L., Capt., 3044 Tuxedo, Detroit.
Szejda, John C., Capt., 3001 Harper Ave., Detroit.
Teitelbaum, Myer, Capt., 18621 Mendota Ave., Detroit.
Tesseine, A. J., Capt., 2325 Madison Ave. S.E., Grand Rapids.
Van Ark, Herman F., Capt., 1927 Belden Ave., Grand Rapids.
Wachs, Leonard V., Capt., Hotel Tuller, Detroit.
Wagenaar, Edward H., Major, Portage.
Wallace, W. S., Capt., Highland Pk. Gen. Hosp., Highland Park.
Wiener, Israel, Capt., 2901 W. Philadelphia, Detroit.
Wilson, Walter J., Jr., Capt., Grosse Pointe.
Windrow, Frank M., Lt. Col., University Hospital, Ann Arbor.
Zawadzki, Edward S., Capt., 5939 Moran Ave., Detroit.
Zimont, Raymond D., Capt., 135 E. 2d St., Constantine.

Minnesota

Balmer, Albert I., Capt., 714 4th Ave. S.W., Pipestone.
Blake, James A., Capt., 49 10th Ave. S., Hopkins.
Bodaski, Albert A., Capt., 204 Main St., Montgomery.
Brooke, James W., Major, Lancaster.
Brownson, Bradley C., Major, Mayo Clinic, Rochester.
Burnham, Wesley H., Major, 607 E. 14th St., Minneapolis.
Cain, James C., Lt. Col., % Mayo Foundation, Rochester.
Campbell, Joseph R., Major, Rochester State Hosp., Rochester.
Canfield, Wayne W., 1st Lt., Houston.
Forsythe, James R., 1st Lt., 1095 Osceola Ave., St. Paul.
Friedman, Harry S., Capt., 1617 11th Ave. S., Minneapolis.
Garrow, Douglas M., Major, 1315 Goodrich Ave., St. Paul.
Guilfoile, Pierre J., Capt., Delano.
Haes, Julius E., Major, Vernon Center.
Harper, Harry P., Lt. Col., Mayo Foundation, Rochester.
Hullisiek, Richard B., Lt. Col., St. Paul.
Jackson, Hunter S., 1st Lt., 512 S.W. 4th St., Rochester.
Klotz, Maurice, Capt., U. S. Veterans Hosp., St. Cloud.
Larson, Ralph H., Capt., Tenney.
Lindblom, Alton E., Major, 4344 Lyndale S., Minneapolis.
Noble, John L., Major, 1091 Hyacinth St., St. Paul.
Odessky, Louis, Capt., 971 Goodrich Ave., St. Paul.
Owens, William A., Major, Montevideo.
Parson, Edwin L., Capt., 815 Fidelity Bldg., Duluth.
Ponterio, James E., Capt., 225 E. 5th St., Shakopee.
Rizer, Dean K., Major, 1916 Fremont Ave. S., Minneapolis.
Rosenthal, Frank H., Capt., Grand Meadow.
Ruggles, George M., Major, Forest Lake.
Sandt, Karl E., Major, 1123 Kenwood Parkway, Minneapolis.
Scaly, William B., Major, 1131 2d St. N.W., Rochester.
Seljeskog, Sigbee R., Major, 2708 E. Lake St., Minneapolis.
Sperling, Louis, Major, 2917 Sunset Blvd., Minneapolis.
Stewart, Donald E., Major, Binet Block, Grand Rapids.
Subby, Walter, Capt., 1916½ 4th Ave. E., Hibbing.
Sullivan, Ralph R., Lt. Col., 3436 47th Ave. S., Minneapolis.
Tillisch, Jan H., Major, 102-110 2d Ave., Rochester.
Winquist, Carl G., Major, Crosby.

Mississippi

Jenkins, William N., Lt. Col., Fort Gibson.
Scott, Jack H., Capt., Kosciusko.

Missouri

Adams, Ralph W., Major, Richmond.
Allee, James W., Major, Eldon.
Ansuetz, Robert R., Capt., 311 E. 69th Terrace, Kansas City.
Bishop, Mariou D., Capt., % City Hosp., St. Louis.
Bowser, John F., Major, 3706 Wyoming, Kansas City.
Bunting, Williston P., Major, K. C. Gen. Hosp., Kansas City.
Chambers, James O., Jr., Major, 1103 Grand Ave., Kansas City.
Dimond, Edgar A., Major, Lamar.
Dixon, John R., Major, Linneus.
Duncan, William H., Major, 7200 Belle Fontaine, Kansas City.
Edwards, Joseph C., Major, 27 Washington Terrace, St. Louis.
Eubank, William R., Major, 1404 Bryant Bldg., Kansas City.
Hibbert, R. W., Jr., Lt. Col., 7724 W. Biltmore Ave., St. Louis.
Hill, Jack H., Capt., 118 E. 43d St., Kansas City.
Hoffmann, Augustin D., 1st Lt., 4522 Clarence Ave., St. Louis.
Howell, Hickman C., 1st Lt., 812 S. Hampton, Springfield.
Johnston, Andrew D., Capt., Osceola.
Jones, Paul L., Capt., Flat River.
Lohr, Curtis H., Col., 501 N. Brentwood Blvd., Clayton.
Lonergan, Warren M., Major, Barnes Hosp., St. Louis.
Mellies, Chester J., Lt. Col., Mo. State Sanatorium, Mt. Vernon.
Mullen, Leo M., 1st Lt., St. Joseph's Hosp., Kansas City.
Pickett, Frank J., Capt., 528 Sergeant Ave., Joplin.

Missouri—Continued

Shapiro, Hyman D., Capt., Missouri Pacific Hosp., St. Louis.
Stuart, Daniel D., Capt., Brunswick.
Tapper, Stephen M., Capt., 7541 Hiawatha, Richmond Heights.
Wilucki, Melvin R., Major, 5936 Arandes Dr., St. Louis.

Montana

Davidson, John G., Capt., 616 W. Mercury St., Butte.
Dismore, Albert B., Major, Troy.
Stephan, Lewis B., Capt., 438 Brooks St., Missoula.

Nebraska

Bozarth, Elton P., Major, Humboldt.
Brott, Clarence R., Capt., RFD 1, Jansen.
Crook, Guy H., Capt., 2305 Towle St., Falls City.
Proffitt, Jonas A., Capt., 910 Hastings Ave., Hastings.
Rider, Larry D., Capt., 2425 South St., Lincoln.

Nevada

Poulson, Fred M., Capt., % Frank Ariacada, Elko.

New Hampshire

Charest, Leandre R., Capt., 402 Wilson St., Manchester.
Danaus, Edouard M., Capt., 237 Bull St., Manchester.
Dudley, Frank G., Capt., Rumney.
Gagnon, Louis P., Capt., 418 Notre Dame Ave., Manchester.
Periault, Gerard R., Capt., 5 Zellwood St., Nashua.
Perrin, Harry W., Capt., 26 School St., Lisbon.
Webster, David K., Major, 38 Auburn St., Concord.

New Jersey

Bassett, Samuel F., Capt., Englewood Hosp., Englewood.
Benz, Francis J., Capt., 84 Fairmount Ave., Chatham.
Bergmann, Ewald H., Capt., 44 Bank St., Sussex.
Daides, John, Capt., Chatham.
Goldstein, Joseph D., Major, 2801 Boulevard Jersey City.
Hancock, Michael Q., Major, 705 D St., Belmar.
Insabella, John, Capt., 37 Oakland Terrace, Newark.
Kandra, Paul H., 1st Lt., 76 Washington Ave., Plainfield.
Kroll, Rolf, Major, 930 Kensington Ave., Plainfield.
Leonard, Isaac E., Capt., 8 N. Swarthmore Ave., Ventnor.
Magill, Marcus, Capt., 4116 Swanton Ave., Atlantic City.
Milligan, Paul R., Capt., 179-181 Lincoln Ave., Orange.
Peiham, Bertram S., Capt., 100 Lorraine Ave., Upper Montclair.
Pignataro, Frank P., Lt. Col., N. J. State Hosp., Marlboro.
Rosenthal, Arthur D., Capt., Vet. Admin. Facility, Lyons.
Rosner, E., Capt., 213 N. Maynard Blvd., Collingswood, Camden.
Schneider, Clinton R., Major, Cedar St., Tuckerton.
Schneider, Harry J., Capt., 36 Rockwell Ave., Long Branch.
Schweizer, Roman G., Capt., 36 Summit Rd., Elizabeth.
Smith, Benjamin E., Capt., 12 Kensington Ave., Trenton.
Snedecor, Spencer T., Major, 288 Maple Hill Dr., Hackensack.
Sokoloff, Oscar I., Capt., 67 Paterson St., New Brunswick.
White, Thomas J., Lt. Col., 221 Union St., Jersey City.
Winn, Samuel L., Major, 15 S. Knight Ave., Margate City.
Ziccardi, Anthony V., 1st Lt., 210 W. Main St., Maple Shade.

New Mexico

Gwynn, Allen C., Major, 701 N. Canal, Carlsbad.
Speed, Henry K. Jr., Major, 1300 N. Wallace St., Clovis.

New York

Alford, Kenneth M., Major, 134 Lancaster Ave., Buffalo.
Antune, Leon I., Capt., 245 E. 178th St., New York.
Barnett, Theodore, Major, 220 E. 18th St., Brooklyn.
Black, Abraham, Major, 8608 Forest Parkway, Woodhaven.
Black, Asher, Capt., 1105 Cogswell Ave., Solvay.
Blinkoff, Jack I., Capt., 432 Montauk Ave., Brooklyn.
Brown, Roswell K., Lt. Col., 596 Delaware Ave., Buffalo.
Brundage, Donald W., Capt., 214 S. Indiana Ave., Watertown.
Burger, Harold, Major, 2928 Jerome Ave., Bronx.
Butterworth, Julian S., Major, 865 1st Ave., New York.
Calabrese, Sam D., Capt., 89-11 63d Dr., Forest Hills, L. I.
Conant, Ralph E., Major, 83-15 116th St., Kew Gardens-Craig.
Crawford, George, Capt., 455 W. 23d St., New York.
Diamondstone, David, Capt., 48-54 205th St., Bayside, L. I.
Doherty, Edward I., Capt., 97th Ave., Ozone Park.
Dollinger, Joseph, Capt., 2028 Mermaid Ave., Brooklyn.
Duncan, William R., Major, 17 5th Ave. N., Pullham.
Ellis, Wade B., Major, 37 Bidwell Parkway, Buffalo.
Elaesser, Arthur G., Major, 2003 Bailey Ave., Buffalo.
Enright, Charles T., Capt., 352 J. 141st St., Bronx.
Epstein, Isidore I., Capt., 215 02 39th Ave., Bayside, L. I.

New York—Continued

Erdman, Albert J. Jr., Capt., 483 W. End Ave., New York.
Feltenstein, Milton D., Capt., 60 Gramercy Park N., New York.
Ferrari, Alfred J., Capt., 114 Homer Ave., Buffalo.
Fierst, Sidney M., Capt., 1138 E. 9th St., Brooklyn.
Fink, Seymour A., Capt., 79 Lewis St., New York.
Fulson, Elroy L., Capt., 2844 Main St., Buffalo.
Furman, Martin A., Major, 3875 Waldo Ave., Bronx.
Gordmet, Harmon C., Lt. Col., 89 4th St., Troy.
Graubard, David J., Lt. Col., 175 Riverside Dr., New York.
Greener, Harold J., Capt., Box 162, Orangeburg.
Habib, David V., Capt., 790 Grand Concourse, N. Y.
Harbater, Melvin I., Capt., 98-500 67th, Forest Hills, L. I.
Harris, William L., Capt., 698 W. End Ave., New York.
Hatz, Bernard, Major, 226 Oakwood Ave., Cedarhurst.
Henze, Carlo, Capt., 485 Pelham Rd., New Rochelle.
Hersh, Joseph H., Major, 255 Eastern Parkway, Brooklyn.
Hoffman, Harry, Capt., 217 High St., Monroe.
Horowitz, Albert W., Capt., 1555 56th St., Brooklyn.
Hunter, Arthur F., Major, 1 Haven Ave., New York.
Irons, Harry S. Jr., Capt., Strong Memorial Hosp., Rochester.
Jackson, William O., Col., Avoca.
Kaskin, Eugene A., Capt., 465 84th St., Brooklyn.
Kizun, Michael, Capt., Fultonville.
Lety, Milton H., Capt., 152 E. 94th St., New York.
McCollom, Robert L., Major, 115 E. 61st St., New York.
McEachren, John N., Capt., 70 S. Main St., Fairport.
Malins, Maurice L., Capt., 242 W. 76th St., New York.
Mann, Herbert Capt., 1114 Ocean Ave., Brooklyn.
Marks, Stuart H. B., Capt., 1115 Euclid Ave., Syracuse.
Maxwell, Edmund, Capt., 409 State St., Carthage.
Mayer, David F., Col., 169 E. 78th St., New York.
Miller, Myron J., Capt., 333 Central Park West, New York.
Minerva, Frank D., Major, 19 Van Buren St., Brooklyn.
Morawski, John S., Capt., 36 Broome St., Brooklyn.
Morrow, Abner R., Major, 15 Albany St., Cazenovia.
Paley, Isaac M., Capt., 73 Lexington Ave., New York.
Palmer, James P., Major, 429 Parker Ave., Buffalo.
Park, Charles L., Capt., St. John's Riverside Hosp., Yonkers.
Parker, David S. Jr., Major, 260 Crittenden Blvd., Rochester.
Parker, Merrill O., Major, 10 Grover St., Auburn.
Plotz, Harry, Col., 671 E. 17th St., Brooklyn.
Plummer, Norman, Major, 331 E. 71st St., New York.
Pollack, Abou D., Major, The Mount Sinai Hosp., New York.
Rabner, Nathan M., 1st Lt., 455 Schenck Ave., Brooklyn.
Read, Paul M., Major, 34-24 87th St., Jackson Heights, L. I.
Russov, Erich H., Capt., 71-18 69th Pl., Brooklyn.
Sandusky, William R., Major, 4 Ridgewood Ave., White Plains.
Sarles, Marvin, Capt., 3235 Bailey Ave., Buffalo.
Sarat, Irving A., Major, 21-05 41st Ave., Long Island City.
Sattel, Morris, Capt., 527 Humboldt St., Brooklyn.
Share, William L., Major, 312 DeForest Rd., Syracuse.
Shine, L. B., Major, E. 141st St., % Lincoln Hosp., New York.
Singer, Frederick, 1st Lt., 39 Morris St., Yonkers.
Singerman, Leon, Capt., 90-15 Grenfell Ave., Kew Gardens, L. I.
Skura, George, Capt., 1212 Ocean Ave., Brooklyn.
Small, Bernard L., Major, 10 Sunset Rd., Lawrence, L. I.
Tarasuk, Irving A., Capt., 1900 Quentin Rd., Brooklyn.
Tartikoff, George, Capt., 1565 47th St., Brooklyn.
Tausig, Daniel P., Capt., 173 Riverside Dr., New York.
Tedesco, Joseph, Major, Arcade.
Tuch, S., Capt., 1090 N. Y. Ave., Huntington Sta., New York.
Tutclbaum, David B., Major, 395 Riverside Dr., New York.
Tiemann, Lorne S., Capt., Otisville.
Tulloch, Donald C., Major, 623 Ford St., Ogdensburg.
Tyson, Terence L., Major, 1 Grace Square, New York.
Ullman, Montague, Capt., 116 Rutledge St., Brooklyn.
Unger, Stanley F., Lt. Col., 365 W. End Ave., New York.
Vogel, Benjamin F., Major, 450 E. 141st St., New York.
Votz, Charles P., Capt., 841 Niagara St., Buffalo.
Wahl, Albert L., Capt., Mt. Vision P. O. Box 43, Otsego County.
Waltzer, Max, 1st Lt., 2928 Jerome Ave., Bronx.
Weeden, Willis M., Lt. Col., City Hospital, New York.
Wernick, Henry, Capt., 15 Dosoris Lane, Glen Cove.
Weisman, Donald J., Capt., 250 Knollwood Rd., White Plains.
Weisselberger, David, 1st Lt., 4871 Broadway, New York.
Wellens, Stanley L., Capt., 429 Beach 47th St., Edgemere, L. I.
Wentworth, Edward T., Col., 35 Chestnut St., Rochester.
White, Robert R., Capt., 1163 East Ave., Rochester.
Wilbur, Daniel W. III, Capt., Morrisania City Hosp., Bronx.
Widow, Herbert B. Jr., Major, 10 E. 90th St., New York.
Work, Henry H. Jr., 1st Lt., 155 Hughes Ave., Buffalo.
Zimmerman, Joseph, Capt., 681 Clarkson Ave., Brooklyn.
Zumpano, Joseph C., Capt., 3064 Pulis Ave., New York.

PHYSICIANS SEPARATED FROM SERVICE

North Carolina

Burgess, Woodrow W., Major, Duke Hosp., Durham.
Curtzwiler, Francis C., Lt. Col., Hydrangea Pl., Wilmington.
Griffis, John W., Capt., Denton.
Harney, James N., Capt., 601 Colonial Dr., High Point.
Johnson, Gaston F., Capt., 4 Chestnut St., Spray.
Ketchie, James M., Capt., Salisbury.
Robinson, Robert L., Major, Mars Hill.
Smith, John G., Capt., 1430 W. Thomas St., Rocky Mount.
Spencer, Thomas B., Capt., 1718 Queens Rd., Charlotte.
Straughan, John W., Capt., Warsaw.
Thurston, Thomas G., Capt., 418 Tarboro St., Rocky Mount.
Tilton, Welcome B., Capt., 83 Brevard Rd., West Asheville.
Wilson, James S., Capt., Kenansville.
Wisely, Martin R., Major, Edenton.

North Dakota

Gibson, Francis D. Jr., Capt., W. Main St., Gibson.
Peterson, Albert M., 1st Lt., Sawyer.
Reichert, Donald J., Capt., 46 4th St. W., Dickinson.
Saxvik, Russell O., Capt., 622 8th St., Bismarck.
Stennes, John L., Capt., Harwood.
Stevens, Joseph B., Lt. Col., 115 W. Avondale Rd., Greensboro.

Ohio

Bell, Joseph J., Major, 608 McAlpin Ave., Cincinnati.
Cannava, Andrew W., Capt., 2916 Woodburn Ave., Cincinnati.
Cooley, John B., Capt., 112 S. Kensington Pl., Springfield.
Doran, Joseph K., Capt., Lakeside Hosp., Cleveland.
Eichhorn, John P., Major, City Hosp., Cleveland.
Ellery, James A., 1st Lt., 29 Blvd., Shelby.
Elsey, Edward C., Lt. Col., 365 Howell Ave., Cincinnati.
Ensign, Paul R., Col., 3332 River Rd., Toledo.
Extejt, Andrew J., Capt., 1102 Eversham St., Toledo.
Frankmann, Raymond W., Capt., 1007 11th St. N.E., Massillon.
Friedman, David L., Capt., 105 17th St., Toledo.
Frye, Carl M., Capt., 304 Mount Vernon Rd., Newark.
Gillen, John L., Major, 1027 17th St. N.W., Canton.
Golden, Alfred, Major, 509 Crosby St., Akron.
Gregg, Walter K., Lt. Col., 906 Nordale, Dayton.
Holmes, Nicholas H., Capt., 59 W. Main St., Chillicothe.
James, Dorrance S., Major, 24 W. William St., Delaware.
Kamesis, John J., Capt., 618 E. 107th St., Cleveland.
King, George L. Jr., Lt. Col., 537 E. Market St., Alliance.
Knies, Phillip T., Lt. Col., 129 N. Columbia St., Columbus.
Kuehn, Adelbert J. G., Major, 2318 Monroe St., Toledo.
Lefkowitz, H. J., Capt., 3336 Maynard Rd., Shaker Heights.
Lieberman, Harry G., Capt., 849 Bell St., Akron.
Maczuga, John A., Capt., 3349 Cherry St., Toledo.
Meltzer, Jack, Major, 740 E. 90th St., Cleveland.
Miles, Robert K., Capt., Box 386, Thompson.
Moore, Frank T., Lt. Col., R. D. 2, Cuyahoga Falls.
Morgan, James E., Capt., 13501 Euclid Ave., E. Cleveland.
Neff, Garnet E., Capt., 3033 N. Hill Rd., Portsmouth.
Pater, Joseph L., Capt., 418 Millikin St., Hamilton.
Piranino, Anthony F., Capt., 214 Oak St., Oberlin.
Press, Sanford, Capt., 120 Brady Circle, Steubenville.
Rehm, Ernest D., Capt., 1031 Vance St., Toledo.
Roemigk, Henry H., Capt., Cleveland.
Rohrbaugh, John R., Capt., 308 1st Nat'l Bank, Massillon.
Rossmiller, Harold R., Major, 1928 E. 90th St., Cleveland.
Rundell, Karl D., Major, University Hosp., Cleveland.
Sachs, Leonard Z., Capt., 12434 Phillips Ave., Cleveland.
Sanccetta, Salvatore M., Capt., Cleveland City Hosp., Cleveland.
Schneider, Louis W., Capt., 35 Millville Ave., Hamilton.
Schroer, William A., Capt., Fort Loramie.
Schumacher, Edward R., Major, 303 E. Beck St., Columbus.
Schweitzer, Julius P. Jr., Capt., 15415 Lake Ave., Lakewood.
Scott, John M., Major, 223 17th St. N.W., Canton.
Shagrin, Arthur, Capt., 1720 Middlehurst, Cleveland Heights.
Shepard, Joseph H., Capt., 2428 Dale Ave., Columbus.
Shilling, Harry E., Capt., 120 S. Oxford St., Troy.
Stelzner, Glenn W., Capt., 204 W. Church St., Newcomerstown.
Stokien, Ernest D., 1st Lt., 1074 E. 99th St., Cleveland.
Stout, Walter M., Capt., 128 W. Lane Ave., Columbus.
Ternocky, Frank, Capt., Bloomville.
Tice, Raymond S., Major, City Hosp., Akron.
Trostel, William W., Major, 1271 Park Ave., Piqua.
Vokoun, Frank J., Major, 17881 Lake Ave., Clifton Park.
Wagner, Gordon T., Capt., 1833 Grammer Rd., Cleveland.
Whitacre, Daniel J., Major, 1550 Melrose Ave., Columbus.
Wilcox, John M. III, Capt., 11118 Cliftons Bend, Cleveland.
Yurick, Edward A., Major, 15520 Fernway Ave., Cleveland.

Oklahoma

Bedford, D. R., Capt., University Hosp., Oklahoma City.
Bergener, Karl L., Major, 1328 S. Quincy, Tulsa.
Bigler, Ivan E., Capt., 110 E. 12th St., Ada.
Dodson, George E., Capt., 424 S. 13th St., Muskogee.
Ensey, James E., Lt. Col., Altus.
Johnston, Leonidas A., Major, 907 N. Bullitt St., Holdenville.
Kroovand, W. H., Capt., St. Anthony Hosp., Oklahoma City.
Stoner, Raymond W., Capt., Box 128, Checotah.
Tracy, Gilbert W., Capt., Erick.
Turnbow, William R., Capt., 2112 W. 41st St., Tulsa.
Wolfe, Ira C., Major, 1601 Hayes St., Muskogee.
Woodburn, Joel T., Capt., 911 Court St., Muskogee.

Oregon

Anderson, Earl M., Lt. Col., 3235 N. E. Ainsworth, Portland.
Begg, Roderick E., Lt. Col., 1106 S.W. Dibbs St., Portland.
Codd, Joseph I., Capt., 412 E. 7th St., Tillamook.
Dinsmore, James F., Capt., Canby.
Moore, Donald E., Major, 243 S. Holly St., Medford.
Parcher, Russell W., Capt., 2447 N.W. Westover Rd., Portland.
Pollock, Robert W., Capt., Halfway.
Rawls, Noel B., Capt., Emanuel Hosp., Portland.
Saunders, George C., Major, 401 Med. Arts Bldg., Portland.
Schlegel, Henry E. Jr., Capt., 2537 N.E. 48th Ave., Portland.
Shields, A. B., Capt., 1526 S.E. Hawthorne Ave., Portland.
Smith, Gordon K., Col., Route 8, Box 135, Portland.
Yost, Charles W., Major, 2710 N. E. 57th Ave., Portland.

Pennsylvania

Atkins, John L., Major, 59 E. Broadway, Red Lio, York Co.
Baczkowski, William C., Capt., 94 S. 18th St., Pittsburgh.
Balin, Joseph A., Capt., 2217 E. Cumberland St., Philadelphia.
Bonafede, Peter L., Capt., 4014 Jonestown Rd., Colonial Park.
Bone, Charles A. Jr., Capt., 105 N. Easton Rd., Glenside.
Borow, Sydney, Capt., 3400 St. Vincent St., Philadelphia.
Cameron, Donald Y., Major, 700 Osage Dr., Pittsburgh.
Carson, W. B. Jr., Lt. Col., RD 9, S. Hills Branch, Pittsburgh.
Deehan, Sylvester J. II, Capt., 843 N. 24th St., Philadelphia.
DeVittorio, Armond A., Capt., 35 W. Cardott St., Ridgway.
Eisner, Abraham G., Major, 841 Jefferson Ave., Scranton.
Fake, Warren H., Capt., 30 W. Main St., Ephrata.
Geeseman, George R., Major, 502 Hutchinson Ave., Canonsburg.
Gelfand, David, Major, 718 Pine St., Philadelphia.
Geller, Joseph, Capt., 1915 E. Allegheny Ave., Philadelphia.
Hession, Henry M., Capt., 1131 S. 53d St., Philadelphia.
Horst, Elmer L., Capt., Veterans Adm., Coatesville.
Hull, Logan B., Capt., 1320 21st Ave., Altoona.
Johnson, David O., Capt., 507 Svarthmore Ave., Ridley Park.
Knox, John J., Capt., 26 York St., Gettysburg.
Landay, Louis H., Major, 5048 Jenkins Arcade, Pittsburgh.
Leigh, Corland D., Capt., 36 Rocklyn Pl., Pittsburgh.
McClintock, J. L., Major, 30 W. Penn Germantown, Philadel.
McGehee, Paul D. Jr., Capt., Doctor's Home, Philadelphia.
Moser, Christian E., Capt., Arch St., Spring City.
Muldawer, Milton E., Capt., 5314 Gainor Rd., Philadelphia.
Narkiewicz, Pius A., Capt., 437 Sunbury St., Minersville.
Noecker, John M., Major, 425 Arthur Ave., Scranton.
Ort, William F., Capt., 37 S. 3d St., Quakertown.
Parish, B. D. Jr., Capt., 957 Bethlehem Pike, Chestnut Hill.
Phillips, David J., Capt., 69 E. Wister St., Germantown, Phila.
Raker, Ned T., Major, 336 S. Juniper St., Philadelphia.
Reese, Evan C., Major, 285 Prospect St., East Stroudsburg.
Rilling, Carl A., Capt., 6071 Frankford Ave., Philadelphia.
Rosenbloom, Meyer A., Capt., 707 E. Ohio St. N.S., Pittsburgh.
Rosenthal, Stephen I., Capt., 720 N. Webster Ave., Scranton.
Scip, Walter R., Capt., 6962 Reynolds St., Pittsburgh.
Seltzer, Maurice, Major, 2020 Rhawn St., Philadelphia.
Skinner, William F., Major, 324 Spring Garden St., Easton.
Smith, James F., Capt., 405 E. Market St., Clearfield.
Smith, William K., 1st Lt., 120 DeSota St., Pittsb'gh.
Taylor, Morgan F., Capt., Hop Bottom, Susquehanna City.
Terlizzi, Carmelo L., Major, 39 N. 3d St., Duquesne.
Thomas, Alvin V., 1st Lt., 2426 W. Norris St., Philadelphia.
Thompson, Wesley D. Jr., Lt. Col., Avon Rd., Haverford.
Tucker, J. M., Capt., 216 Nippon St., Mt. Airy, Philadelphia.
Turnoff, David, Capt., 5900 Castor Ave., Philadelphia.
Walsh, Martin J., Capt., 54 William St., Pittston.
Ward, Frederick W., Capt., 1119 Ferry St., Easton.
Weber, Charles L., Capt., 1143 5th Ave. E., McKeesport.
Weiss, William A., Capt., 93 Hanover St., Wilkes-Barre.
Welch, John T. G., Capt., Lancaster.
Wiener, Jacob S., Capt., 2408 S. 5th St., Philadelphia.

PHYSICIANS SEPARATED FROM SERVICE

J. A. M. A.
Dec. 8, 1945

Rhode Island

Acicero, Michael, Major, 225 Admiral St., Providence
Healey, James P., Lt. Col., 71 Earle St., Central Falls
McVay, John F., 1st Lt., 56 Maynard St., Pawtucket
Seltzer, Benjamin, Capt., 300 Pontiac Ave., Cranston
Selbst, Charles A., Capt., 40 Byfield St., Bristol
Simclair, Edmond B., Major, 176 Evergreen St., Providence
Wells, Guy W., Col., 124 Waterman St., Providence

South Carolina

Viston, William C. Jr., Capt., 119 W. Creswell Greenwood
Barron, William T., Lt. Col., 1501 Tanglewood Rd., Columbia
Brunson, Joseph W., Major, Mill St., Camden
Epps, George L., Lt. Col., Newberry
Heibert, W. C. Jr., Major, 143 Wolford Campus, Spartanburg
McCutchen, George T., Lt. Col., Valley Rd., Columbia
Ramey, John F., Capt., Anderson
Richard, Dalbert J., Major, Vet Admin Facility, Columbia
Rubinowitz, Abraham M., Capt., Beaufort
Stith, Robert B. Jr., Capt., 105 W. Cheves St., Florence
Taylor, Thomas J., Lt. Col., 1605 Heyward St., Columbia
Topp, Olfert W., Capt., 715 N. Main St., Greenville
Weitz, John A., Major, Box 115, Estill

South Dakota

Catey, Robert M., Capt., 603 2d Ave., West Mobridge
Dahlin, David C. Jr., Capt., Centerville
Dunstra, Fred, Capt., 1235 W. 22d St., Sioux Falls
Hill, Willard H., Capt., 244 Centerville
Nyquist, Roy H., Capt., Iroquois
Stewart, Marvin J., Capt., 1627 Davenport St., Sturgis

Tennessee

Boykin, James T., Major, Lewisburg
Bratley, Forest G., Major, 810 Mt. Vernon Circle, Chattanooga
Chandler, John H., Major, 706 S. Mansfield Memphis
Hayes, James F., Capt., Madison
Hollabrough, Charles F., Major, Shackleford Rd., Nashville
Robinson, Elisha M., Lt. Col., Sheppard Pl., Nashville
Scott, James A., Capt., St. Thomas Hosp., Nashville
Stewart, Marcus J., Lt. Col., Campbell's Clinic, Memphis
Turley, John C., Capt., 626 Center Dr., Memphis
White, But N., Capt., 506 N. Main St., Murfreesboro

Texas

Adamson, William B., Lt. Col., 2341 S. 10th, Abilene
Althaus, John W. A., Major, 1305 Presidio, Fort Worth
Andrus, Bruce C., Capt., 421 Harvard St., Houston
Brenster, Clarence B., Lt. Col., 1012 W. Belknap St., Ft. Worth
Coleman, Jesse L., Capt., Box 14, Sanatorium
Daniell, Alfred H., Capt., Brownfield
Dye, Everett L. Jr., Capt., 411 Beech St., Ploverview
Fayle, Percy R., Capt., Jefferson Davis Hosp., Houston
Garie, Peter R., Capt., 1224 Crockett, Amarillo
Katz, Sol, Major, 4101 Prescott, Dallas
Leaton, Robert E., Capt., 744 N. Anglin St., Uchirne
Moore, R. M., Lt. Col., U. of Texas, Sch. of Med., Galveston
Quinn, Clarence F., Major, 218 12th Ave., N. Texas City
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Robnett, James B. Jr., Major, 1502 Med. Arts Bldg., Houston
Sadler, Charles B., Capt., Box 33, Brookshire
Shane, Hugh, Capt., 801 E. Houston St., Marshall
Sohs, Gume R., Capt., 717 W. Highway, Mercedes
Suehs, Oliver W., Major, 600 Bellevue Pl., Austin
Taylor, Otis Jr., 1st Lt., 2706 24th St., Lubbock
Taylor, Surse J. Jr., Capt., McKinney
Tenney, Samuel W., Capt., 203 1/2 N. Washington, Marshall
Tipton, George W., Capt., Marshall Ford Dam
Todd, David A., Lt. Col., 305 Thelma Dr., San Antonio
Wagner, Gerald W., Lt. Col., 815 Denver St., Ploverview
Whicker, Howard P., Capt., Georgetown
White, James N., Capt., 430 N. Getty St., Uvalde
Withers, B. T. Jr., Major, 238 W. Beauregard Ave., San Angelo
Wolfe, Alfred S., Major, 804 Layton Ave., Henderson

Utah

Cleary, James A., Major, 458 B St., Salt Lake City
Cottam, Alma H., Capt., 310 S. 13th St., Salt Lake City
Fennimore, Stanford W., Capt., Price
Rees, Gordon S., Major, Gunnison

Vermont

Audette, Paul J., 1st Lt., 50 S. Willard St., Burlington
Ayer, Roscoe F., Major, 74 Summer St., Barre

Vermont—Continued

McCrea, John H., Capt., 33 E. Allen St., Winooski
Newcombe, Richard V., Major, 98 N. Prospect St., Burlington
Pisanello, Victor J., Capt., 56 Strong Ave., Rutland
Pocahontas, John S. Jr., Capt., 1 Main St., Florence
Powell, Platt R., Capt., Milton
Rath, Walter H., Major, St. Albans
Rawson, Burnett S., Major, North Williston
Seltzer, Leo M., Capt., 148 Hill St., St. Barre
Simonds, John R., Capt., Burlington
Soule, Arthur B. Jr., Lt. Col., 144 Ledge Rd., Burlington
Spahrak, Sam, Capt., 76 Spruce St., Burlington
Tomist, Ernest P., Capt., 63 Baire St., Montpelier

Virginia

Ballou, N. T. Jr., 1st Lt., 1200 Prince Edward, Fredericksburg
Graham, Stephens, Col., 327 Oak Lane, Richmond
Llewellyn, John T., Capt., 2708 West Ave., Newport News
Martin, Walter B., Col., 339 Boush St., Norfolk
Massie, John R. Jr., Capt., % Memorial Hosp., Richmond
Meyers, Robert P., 1st Lt., 1200 E. Marshall St., Richmond
Quillen, George H., 1st Lt., East Stone Gap, Va.
Randolph, Angus C., Capt., Va. Episcopal School, Lynchburg
Russell, Delbert A., 1st Lt., Med. Col. of Va., Richmond
Saunders, Wade H., Capt., 221 3d St. S.R., Roanoke
Stelman, Vernon A., Capt., 1912 N. Lincoln St., Arlington
Tucker, Ransom E., Major, Randolph Center
Zimmerman, William W. III, Major, Purcellville

Washington

Addington, Eccell A., Major, 3408 S. Mammo Blvd., Spokane
Butts, William S., Capt., 1311 W. 6th Ave., Spokane
Carroll, Gerhard S., Capt., 1627 21st N., Seattle
Collins, John D., Capt., 4110 McGilvra St., Seattle
Dunstine, Morris J., Capt., 5810 Cowen Pl., Seattle
Faubourg, Edwin J., Major, 617 N. C. St., Tacoma
Hardy, John L. Jr., Major, Lindcote
Henry, Randall W., Capt., Lindcote
Killogg, Howard B., Lt. Col., 2011 24th Ave. N., Seattle
Leavitt, Darrell G., Major, 1100 Summit, Seattle
McDermott, Joseph A., Capt., % L. 1 Little, Naches
Nunn, Leslie L., Lt. Col., 401 Cedar St., Vancouver
Porter, John B., Capt., 1200 Morton St., Port Orchard
Robertson, Duncan, Capt., 1251 22d N., Seattle
Slind, Ole, Capt., Providence, Seattle
Smith, George C., Major, 1526 S. Madison St., Spokane
Speir, Edward B., Lt. Col., 2400 42d St. N., Seattle
Thornhill, Raymond P., 1st Lt., 1322 Monroe St., Spokane

West Virginia

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Althaus, William H., Capt., 201 Wood St., Clarkburg
Ambricht, George L., Major, 1141 National Rd., Wheeling
Bretman, Howard G., Capt., 420 Highland Ave., Williamstown
Dunham, Lester E., Major, Box 533, Gary
Hughes, Carlisle B. Jr., Capt., C & O Hosp., Huntington
Layman, Leslie H., Major, Holden
McPherson, Kenneth M., Major, 33 Wickham Ave., Beckley
Staats, Roydick, Capt., Curo
Strawn, Lucien M., Capt., 518 Lions St., Suncost Morgantown
Whitlock, John W., Major, Raleigh, W. Va.

Wisconsin

Bachhuber, Edward A., Col., 306 William St., Mayville
Carr, John F., Major, 630 N. 8th St., Sheboygan
Engelmann, Andrew T., Capt., St. Francis Hosp., LaCrosse
Ferris, James W., Lt. Col., 2820 N. 40th St., Milwaukee
Gollin, Frank F., Capt., La Farge
Holman, Arthur M., 1st Lt., 2605 N. 9th St., Sheboygan
Koepp, Charles L., Capt., 1554 Main St., Maumette
Lutschutz, Leo M., Capt., 3216 Moorland Ave., Racine
Murphy, James J., Capt., Park Falls
Quishak, Gummert D., Capt., 421 N. Patterson St., Madison
Schwartz, Saul F., Capt., 1802 N. 12th St., Milwaukee
Vorst, Philip F., Capt., Sheboygan

Wyoming

Jenkins, Walter I., Capt., Keenan Bldg., Sheridan
Rideway, Eli C. Jr., Capt., Lane Dr., Cody

Canal Zone

Bynoe, Ernest F., 1st Lt., P. O. Box 51, Colon

England

Gurney, Theodore A., Capt., Monkton Combe Bath

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Dec. 7, 1945.

Opposition to Truman Health Plan

Senator Robert A. Taft, Republican of Ohio, has disputed President Truman's denial that his \$3,000,000,000 a year health insurance program was not "socialized medicine." The District of Columbia Medical Society, through Dr. William Earl Clark, president, commented: "As President Truman has very well stated, there is nothing essentially new about his compulsory health insurance plan. The medical profession, like the President, believes in spreading costs of medical care by means of prepayment. It wants the people of this country to have the best medicine has to offer. Where it differs from him is that, in its opinion, this can best be accomplished through the voluntary system, which it believes is the American way of life."

Hospitals Get Priorities on Penicillin

The Civilian Production Administration, successor to the WPB, has given civilian hospitals, veterans' hospitals and the U. S. Public Health Service priorities in obtaining penicillin from suppliers. Military and emergency orders receive top priority, and civilian hospitals get second preference. The agency reports that penicillin supplies are sufficient for essential United States requirements but the priorities were given to safeguard hospital supplies in the face of rising foreign demands, particularly from Latin America. The CPA is arranging with the Department of Commerce to restore export controls on the drug. The trade reports production, quality and effectiveness of penicillin increased during the war. Production in 1945 is estimated at more than 8,500,000,000 units, five times above 1944 production.

Hospitals Discuss Adjustment to Peacetime

The fifth annual meeting of the Maryland-District of Columbia Hospital Association, held November 29 and 30 at Baltimore, discussed adjustments to peacetime operation by hospitals. Affiliating groups are the Maryland Association of Hospital Pharmacists, Maryland Association of Medical Record Librarians, District of Columbia Association of Medical Record Librarians, District of Columbia Dietetic Association, American Association of Social Workers, Potomac District, and the Maryland Dietetic Association.

Posthospital Care for Alcoholic Addicts

The Women's Safety Committee of the American Automobile Association was advised by two District of Columbia medical men that posthospital therapy should be given to reduce alcoholism. Dr. Daniel I. Seckinger, deputy District health officer, and Dr. Leopold Wexberg, director of the District Alcoholic Clinic, said that facilities are badly needed in the capital for the treatment of alcoholic addicts.

President Truman Appeals for Safety Campaign

Federal agencies and departments have been asked by President Truman to conduct safety campaigns to cut the expense of accidents and fatalities to federal workers, which cost the government \$67,500,000 last year. The chief executive in his message to the annual meeting of the Interdepartmental Safety Council outlined a six point program intended to remove work hazards, which killed 717 workers and seriously injured 81,000.

National Nutritional Program Being Studied

A national nutrition program to raise dietary standards is being considered by the Truman administration. The program is said to involve government subsidization of family supplies where there is lack of income to guarantee an adequate diet. The Department of Agriculture has submitted plans on raising

dietary standards to the White House. The plans suggested include a broader school lunch program, including hot lunches in every public school, the financing to be by federal, state and local school governments. A relatively small number now receive lunches at government expense. Senators Aiken, Republican of Vermont, and La Follette, Progressive of Wisconsin, introduced a bill calling for food stamps similar to those used in the thirties to dispose of farm surpluses.

Council on Medical Service and Public Relations

MINUTES OF THE MEETING OF OCT. 18, 1945

The meeting was called to order by the chairman, Dr. E. J. McCormick, at 10:35 a. m. in the Board of Trustees room of the American Medical Association headquarters.

Members Present.—Dr. John H. Fitzgibbon, Dr. James R. McVay, Dr. A. W. Adson, Dr. Thomas A. McGoldrick, Dr. Louis H. Bauer, Dr. W. R. Brooksher, Dr. Olin West, Dr. Joseph S. Lawrence and Mr. Thomas A. Hendricks, secretary, and Mr. George W. Cooley.

Guests Present.—Mr. Louis A. Neff, American Cancer Society; Dr. Joseph S. Wall, president, American Academy of Pediatrics; Dr. Clifford C. Grulee, secretary, American Academy of Pediatrics; Dr. H. H. Skinner, Yakima, Wash.; Dr. James McLeod, president, South Carolina Medical Association; Dr. F. H. Falls, American Association of Obstetricians and Gynecologists; Mr. M. L. Meadors, director of public relations, South Carolina Medical Association.

Approval of Minutes.—On a motion by Dr. Adson, seconded by Dr. Fitzgibbon, the minutes of the meeting of June 21 and 22 were approved.

Annual Report.—Mr. Hendricks stated that the annual report of the Council was ready for publication.

Supplementary Report.—It was decided that the secretary and chairman of the Council should prepare a supplement to the annual report and present it to the Council members for approval at the December meeting. Definite suggestions as to the form of the supplementary report were made by Dr. Fitzgibbon and Dr. Adson, particularly as to the recommendations to be presented to the House of Delegates.

The Budget.—After some discussion Dr. Adson moved that Mr. Hendricks and Dr. Lawrence confer with Dr. West with reference to readjustments within the budgets of the two offices. Dr. McVay seconded the motion and it was carried.

Rating Committee.—It was announced that a meeting of this special committee was in progress in another part of the building with Dr. Sensenich in charge.

Michigan Invitation.—After discussion as to the next meeting of the Council, the secretary was instructed to wire an acceptance for the Council to attend a special meeting of state society presidents and other presidents sponsored by the Michigan State Medical Society on Sunday, December 2, at Hotel Continental.

Regional Conferences.—After considerable discussion as to various areas and cities in which conferences might be held, it was decided to leave this matter until the December meeting for a definite outline as to future programs.

E. M. I. C. Program.—Dr. Wall read an analysis of S. 1318. Members and guests discussed it at length. It was felt that the American Medical Association should take the leadership in regard to this and other bills. Dr. Skinner was asked to confer with Drs. Bauer and McGoldrick and Fitzgibbon in regard

to a motion he desired to put and in the recommendations for the Public Relations Conference.

American Cancer Society.—Dr. Bauer moved that the Council recommend approving the work under the program of the Service Division of the American Cancer Society. Dr. McGoldrick seconded the motion and it was carried. It was decided that no publicity should be given this approval until the House of Delegates had taken action on the report.

Prepayment Medical Care.—Holbrook Plan: Dr. Adson reviewed Col. Paul Holbrook's plan in some detail. It was suggested that the Council recommend that Colonel Holbrook and General Hawley be invited to address the House of Delegates with reference to the plan.

Hawkins Plan: Dr. Adson presented the Hawkins plan in detail and read questions he had raised and Mr. Hawkins' answers to the question. There was discussion of the plan by the Council members. Dr. Bauer moved that no further action be taken on this until Saturday morning when we have a report from the round table. Dr. Adson seconded the motion, which was carried.

Report of Mr. Cooley.—Mr. Cooley read his report on prepayment medical service plans. Dr. Brooksher made the motion that Mr. Cooley be commended on his report, which was seconded by Dr. Adson. Motion carried.

The motion was made and amended to read "the Council appoint an advisory committee to study the entire picture of medical service plans under the direction of the Council for the benefit of the Council and the American Medical Association and all component societies." This motion was carried. The chairman of the Council is to appoint the members of this committee.

Additional Personnel Needs.—Mr. Hendricks suggested that a number of field men be employed. It was decided that one field man should be employed and trained both in the Washington office and at headquarters.

Mr. Hendricks was instructed to look into the possibility of securing a man to assist in publicity work for the Council. He was instructed to make a report on progress along this line at the December meeting of the Council.

Men in Service.—There was considerable discussion on all phases of this problem. It is the consensus that everything possible be done to assist men in service.

Washington Office.—Dr. Lawrence reported on the work being done by the Washington office. He asked for definite information on A. M. A. opinion of bills at an early point so that he might be better able to talk with persons he meets in his Washington work. This brought up the question of interim authority. The opinion was expressed by Dr. Bauer that no action should be taken until the Trustees had expressed an opinion.

Council Representative at Wagner-Murray-Dingell Hearings.—No action was taken. It is the consensus that Dr. West will call on the Council if the need is felt.

Council History for Centennial Celebration.—The chairman, Dr. McCormick, instructed Mr. Hendricks and Dr. Bauer to prepare such a history.

Plan of Association of Industrial Surgeons and Physicians.—The Council feels that it cannot take action until it has further details.

Subscription to Public Health Economics.—It was felt that the Council office should have this publication and abstract articles of interest to Council members and supply them.

Next Meeting of Council.—A motion was carried that the Council meet at 9 o'clock on Sunday, December 2.

Interpretation of Fourteen Point Program by Dr. Bauer.—Dr. Bauer read the material he gave in Kansas City, and the Council heartily endorsed this paper and requested that it be printed with the full approval of the Council.

The meeting was adjourned at 11 o'clock Thursday evening, October 18.

E. J. MCCORMICK, M.D., Chairman.
THOMAS A. HENDRICKS, Secretary.

PREPAID MEDICAL CARE NEWS

Wisconsin

The State Medical Society of Wisconsin has approached the problem of prepayment medical care from a quite different angle than that of most medical societies. At the meeting of the society's house of delegates in November a plan was approved authorizing cooperation with private insurance carriers. While two local medical societies, one in Illinois and one in Ohio, have approved similar proposals for their own local areas, neither program is as far reaching as the Wisconsin action.

The 1944 Wisconsin house of delegates started the idea of using private carriers by approving a resolution which provided in part that "a proper committee of this society be instructed to confer with licensed insurance companies in this state in an effort to secure the extension of sickness care policies to a point as to provide the broadest comprehensive coverage possible within a premium structure that particularly appeals to the so-called low income group." This committee was appointed with Dr. H. H. Christofferson of Colby, Wis., as chairman. Other members were Drs. L. A. Capps, Marshfield; Charles Fidler, Milwaukee; C. E. Pechous, Kenosha, and C. O. Wingom, Madison.

A year later, in November 1945, the committee submitted a detailed report providing for the "Wisconsin Plan." In its report the committee proposed "that the medical profession of Wisconsin enter into agreement with such insurance carriers licensed in this state as are willing to do so providing for the "Wisconsin Plan" of prepaid insurance for the care and treatment involved in the fields of surgery, obstetrics, associated anesthesia and radiology, and hospitalization, embracing the following general points:

1. The "Wisconsin Plan" shall be approved by the State Medical Society of Wisconsin and in the form so approved, and without variation, shall be available to any licensed insurance company in Wisconsin for use in accordance with its terms.

2. The "Wisconsin Plan" shall provide:

- a. Full coverage benefits for care involved in the fields of surgery and obstetrics, whether given in or out of a hospital;
- b. Full coverage benefits for anesthesia and radiology, when given outside of a hospital;
- c. Broad benefits for hospitalization and therapeutic services performed in the hospital.

3. Income limits for those on the service plan basis will be \$2,080 annually per single person and \$2,600 for married persons.

4. Free choice of medical physicians is to be provided.

5. For nonhospitalized cases, the maximum anesthesia benefit is \$15, and for miscellaneous operative radiology procedures the maximum is \$35.

6. The total maximum hospital benefit will be \$180.

7. The premium will be divided into two groups, the lower being for those who join as a part of a group and the higher for those who join individually.

Announcement by Abbott Laboratories of a Medical Expense Insurance Plan for Employees' Dependents

The directors of Abbott Laboratories have announced the adoption of a medical expense insurance plan for the dependents of their employees. This is an addition to the surgical plan now in operation.

The employees are at present insured for daily hospital and surgical benefits. The new plan will provide a limited protection for employees' dependents. The benefits include \$2 for each office or hospital visit and \$3 for each visit by the physician to the home. The limit is one visit a day per dependent and fifty visits per dependent in any one calendar year. In addition, laboratory fees and examination up to \$25 a year are included.

This plan supplements for employees' dependents the insurance already in effect covering hospitalization and surgical benefits. The company also has a group accident and employees' health insurance policy.

SURPLUS MEDICAL AND HOSPITAL SUPPLIES

The Committee on Postwar Medical Service of the American Medical Association, December 1, adopted the following report, made by its subcommittee (Dr. Ernest E. Irons, Dr. Morris Fishbein, Dr. George M. Piersol, Miss Mary Switzer and Father Alphonse M. Schwitalla, chairman):

Legislative History

To understand the present situation with reference to surplus supplies, a brief review of the legislative history of the Surplus Property Act of 1944 is necessary (Public Law 457, 78th Congress, Approval Oct. 3, 1944).

The Surplus Property Act as passed by the Senate was not identical with that passed by the House. The Senate bill extended equal consideration to public and nonpublic educational and public health institutions. The House bill gave no specific status to nonpublic or non-tax supported agencies.

On the last day of the debate in the Senate, Senator LaFollette introduced an amendment which purported to give state and municipalities a time priority so that they may compete on a basis of equality with nonprofit non-tax supported agencies which did not have to attend particularly to purchasing regulations and requirements. The amendment was embodied in the final act in a modified form and is designated as section 13 (f):

"The disposal of surplus property under this section to states and political subdivisions and instrumentalities thereof shall be given priority over all other disposals of property provided for in this act."

On the basis of this provision, the legal department of the Surplus Property Administration ruled that states and political subdivisions and instrumentalities thereof have a priority not merely of time but, since a mere time priority would be useless, also a priority of access to information and a subsequent prior right to purchase surplus property.

A number of private agencies, as, for example, the American Council on Education, have consistently urged that the legislative history of the act modifies the term "priority" in such a way that it should be interpreted as conveying only a time priority to state institutions. The protests of a number of private agencies is a matter of record. Mr. Symington declined to accept this interpretation of section 13 (f).

On Oct. 17, 1945 a meeting was held of the officials of the Surplus Property Administration, of the Public Health Service and of the members of the advisory group. A regulation was discussed which would have set up a definite reserve for institutions performing a public health service. The term "a public health service" was understood in a very wide sense as meaning any service conducive to the public health. This liberalization of terms paralleled a previous liberalization of the term "tax supported institution" as meaning any institution which receives moneys from public sources for services rendered to public agencies (a hospital receiving E. M. I. C. funds, for example, would thus be considered as a tax supported institution). The Public Health Service was designated as the administering agency for health and hospital supplies. Not only was it to have the power to state what type of property should be reserved and the amounts to be reserved for special uses or for disposal but also it was to certify the institutions eligible for the procurement of such property. Applications by institutions were to be submitted for approval to the Public Health Service.

At this meeting public health authorities requested that, as a condition for eligibility to receive surplus supplies, financial statements be submitted in support of a claim for need of surplus property and in support of preferential allocations with reference to relative need. Several agencies opposed this demand of the Public Health Service, but it was upheld by the Surplus Property Administration.

At the conclusion of the meeting, suggestions were made concerning the revision of the regulations. Specific recommendations were made to the officials of the Surplus Property Board

with the view of materially benefiting hospitals, schools and charitable institutions. Some of these suggestions were incorporated in the suggestions promulgated on Nov. 6, 1945.

On Nov. 2, 1945 a joint meeting of representatives of the Federal Security Agency, of the Public Health Service and its advisory committee and of the Office of Education and its advisory committee took place on call by the surplus property administrator. At this meeting a new draft of the regulation was discussed. This new draft had a tendency to eliminate the Public Health Service and the Office of Education as agencies for certifying eligibility of institutions for surplus properties. The Public Health Service and the Office of Education accordingly refused to approve the new regulation and undertook the revision of the draft which had been presented at this meeting. Under date of Nov. 6, 1945 a new set of regulations, S. P. A. Regulations No. 14, was published and this set of regulations is the result of the joint effort of the representatives of the Federal Security Agency, the Office of Education and the United States Public Health Service. If the criteria to be established on the basis of the new regulations are in harmony with the intent of Congress, these new regulations should be satisfactory to both the tax supported and the non-tax supported institutions. If, on the other hand, the new criteria do not carry out the intent of Congress, the non-tax supported institutions will be at a distinct disadvantage.

Regulation No. 14

Regulation No. 14 bears date of Nov. 6, 1945 and was issued Nov. 21, 1945. In his letter of transmissal the director of the Office of War Property Distribution says that the regulation was designed "to effectuate section 13 of the Surplus Property Act of 1944." The regulation recognizes the Federal Security Agency as the certifying agency for the disposal of surplus property in the health, educational and nonprofit fields and for the performance of the other functions necessary in such disposal. A Policy and Procedure Memorandum No. 2, Nov. 8, 1945, of the Federal Security Agency, Office of War Property Distribution, authorizes the United States Public Health Service to perform these various functions for the Federal Security Agency, as far as there will be disposal to, and utilization by, public health institutions and instrumentalities. The letter of transmissal further informs the recipient that the Division of Surplus Property Utilization of the United States Public Health Service is at present engaged in developing criteria and procedures for the distribution and utilization of surplus property for public health use. It is expected that these criteria will be completed at an early date and that they will be ready shortly for review by the advisory committee and for evaluation at a meeting of the advisory committee to be held some time in the week of Dec. 10, 1945.

According to the Policy and Procedure Memorandum No. 2, the United States Public Health Service under the authority of the director is charged with the obligation of performing the following functions: (1) the preparation of certified lists of public health institutions and instrumentalities; (2) the preparation of estimates and recommendations concerning property to be reserved for public health institutions and instrumentalities; (3) the development of criteria for the determination of legitimate and relative needs of public health institutions and instrumentalities; (4) the establishment of procedures under which applications by or for public health institutions and instrumentalities will be submitted and reviewed and the procedures to be followed for action subsequent to the review; (5) cooperation

with disposal agencies with respect to the giving of notices of available surplus property to public health agencies; (6) such other functions as may be necessary to fulfil the purposes and functions of Regulation No. 14 and in fulfilment of the intent for the public welfare of the entire act.

A number of significant passages—not all of them—might be here quoted:

1. *Scope*.—"This part grants to nonprofit institutions the opportunity to acquire surplus property and, in the case of educational and public health institutions, the right to a discount" (paragraph 8314.3).

2. *General Policy*.—"Section 13 (a) of the Surplus Property Act of 1944 provides generally, to the extent feasible, for transfer of surplus property on the basis of need to nonprofit institutions and instrumentalities so that they may have the opportunity to fulfil in the public interest their legitimate needs, and that surplus property that is appropriate for school, classroom or other educational use, and surplus medical supplies, equipment and property suitable for use in the protection of public health, including research, may be disposed of at a value which takes into account any benefit which has accrued or may accrue to the United States from the use of such property" (paragraph 8314.3).

3. *Eligibility*.—"The Federal Security Agency is charged with the responsibility for submitting to the surplus property administrator certified lists of institutions and instrumentalities eligible for the benefits provided under this part" (paragraph 8314.4).

4. *Criteria*.—"The Federal Security Agency shall develop criteria by which to determine legitimate needs of nonprofit institutions and instrumentalities which apply for surplus property under this part" (paragraph 8314.6).

5. *Disposals*.—"Any nonprofit institution whose application is approved by the Federal Security Agency, or on appeal by the surplus property administrator, shall be entitled to acquire from disposal agencies any surplus property available for disposal, at the fair value of such property and in lots not smaller than the smallest lots consistent with commercial practice" (paragraph 8314.8).

6. *Fair Values*.—"Such fair value shall not be greater than the lowest price which is offered to any trade level at the time of acquisition by the nonprofit institution or instrumentality" (paragraph 8314.9).

7. *Discounts*.—"Disposal agencies shall allow from the fair value of property as set forth in paragraph (a) a discount of 40 per cent on orders by or for educational or public health institutions or instrumentalities" (paragraph 8314.9).

8. *Certificate of Need*.—"Each application to the Federal Security Agency by or for a nonprofit institution or an instrumentality eligible for the benefits of this part shall bear a certificate by a responsible officer thereof that the property sought by the applicant is required for its own use to fill an existing need of the applicant and that it will not be resold to others within three years of the date of purchase without the consent in writing of the disposal agency" (paragraph 8314.10).

Disposal at Present of Surplus Property

Questions have been repeatedly asked by various agencies concerning the regulations and provisions under which disposition is now being made of surplus properties. A word concerning these is not out of place:

1. Army Procurement Regulation No. 7 permits army area commanders to dispose of property suitable for vocational education to those institutions which have conducted preinduction courses or which are now conducting courses for the training of men needed by the Army.

2. Surplus Property Administration Regulation No. 9 provides that local commanders of the Army may award surplus property to institutions, such as educational institutions, pro-

vided the value of the property does not exceed \$300 and provided further that the property so disposed of is considered and declared "salvage," the term salvage being given a broad interpretation.

3. Apparently, property is even now being acquired under Regulation No. 14, Nov. 6, 1945, at sharp discounts, approximating 30 per cent or even more of retail prices.

Educational institutions have (1) contacted the local commanders of stations in which army properties have been in use during the war and have made arrangements for the purchase or removal of such properties or (2) they have sent lists to the corps area commanders through personal contacts and have been notified by such corps area commanders when the property is available or (3) they have contacted the local area commander, who has transmitted requests to the corps area commander directly for authorization or who has transmitted the request to the corps area commander through some state agency appointed for the purpose, in one state, the state board of education.

Disposal of Surplus Property to Individual Practitioners

On behalf of the American Dental Association, Dr. Camalier has taken great interest in clarifying the issues with reference to preferential concessions to dental veterans. He has taken a stand against special priorities and price concessions to dental veterans "applying for this material, who happen to state that they will practice in an area deemed critical by the United States Public Health Service and that other veterans, who may desire to practice in other states (where the need is) not deemed so acute, will not receive similar price concessions."

In his letter to Major L. F. Young, Sept. 19, 1945, Dr. Camalier reasons as follows: There is not now a proper distribution of dentists throughout the United States and there are areas of crucial shortage. But, as far as dentists are concerned, practically every community needs dentists and, wherever a veteran may locate, his services will be greatly needed. Dentists are not free to move from state to state. Nearly all dentists have licensure in one state. An adequate reciprocity plan has not been developed, and moving into another state means taking another examination for licensure. Since this situation exists, it would do no good to give priorities and price concessions for the purchase of dental equipment to dentists who locate in areas designated by some governmental agency and deemed an area of critical need. Such a procedure would not solve the problem of distribution of dentists. If such concessions and priorities are deemed desirable, they should be extended to every dentist veteran, no matter where he locates.

The promulgation of Regulation No. 7 and the listing in periodical journals of the regional officer of the Smaller War Plants Corporation has caused veteran dentists to apply quite generally for purchases of surplus material, and many have delayed opening their offices because they are waiting for word about the disposal of this surplus property. This has caused great confusion. Regulations should be eliminated. The priorities, price concessions, et cetera, should be greatly liberalized; otherwise the veteran dental officer "will be home many months before he is able to start practice." Dental equipment must be made available to the returning veteran dental officer in the simplest possible way without delay.

What is said here by Dr. Camalier concerning dental veterans should probably be said about physician veterans.

Coming Medical Meetings

American Academy of Allergy, Chicago, Dec. 10-11. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.
American Society of Anesthetists, New York, Dec. 12-13. Dr. McKinnie L. Phelps, 745 Fifth Ave., New York 22, Secretary.
Puerto Rico, Medical Association of, San Juan, Dec. 14-16. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

Personal.—Dr. Vida H. Gordon has resigned as director of the crippled children's division, state department of public welfare, and will enter private practice in Little Rock.—Dr. William P. Scarlett, Morrilton, formerly health officer of Wichita, Texas, has been named health officer of Little Rock.

CALIFORNIA

Name of Research Laboratories Changed.—The name of Bureau of Research Laboratories of the California Department of Public Health has been changed to the Virus Laboratory of the Division of Laboratories.

Medical Board Election.—At the annual October meeting of the California State Board of Medical Examiners Dr. Frank W. Otto, Los Angeles, was elected president, Dr. Herbert S. Chapman, Stockton, elected vice president and Dr. Frederick N. Scatena, Sacramento, reelected secretary.

Hospital Advisory Board.—Dr. John C. Sharp, Salinas, medical superintendent of Monterey County Hospital, is chairman of the hospital advisory board appointed by Governor Earl Warren to assist the state department of public health in the administration of the new hospital act, according to *California's Health*.

Human Case of Anthrax.—One human case of anthrax has been reported from Sutter County resulting from an outbreak of the disease in dairy and beef herds. The human case occurred in a man who had skinned an animal which had died of anthrax in Sutter County. A lesion developed on his wrist the next day and he was advised by a veterinarian to see his physician. A diagnosis of anthrax was made and the patient was placed in the hospital and treated successfully with sulfathiazole and penicillin.

CONNECTICUT

Commission on Care of Aged and Chronically Ill.—Gov. Raymond E. Baldwin has appointed the members of a newly created commission for the care and treatment of the aged, infirm and chronically ill which was authorized by the passage of substitute for house bill 144 by the 1945 general assembly. Members of the commission and their terms of office are as follows:

Dr. Abraham N. Credick, New Haven, president of the Connecticut Cancer Society, three years.

Dr. Joseph H. Howard, Bridgeport, president of the Connecticut State Medical Society, two years.

John W. Lamb, Plainville, representative, Connecticut legislature, chairman of the committee on public welfare and humane institutions, two years.

James L. McConahey, Cornwall, chairman, United China Relief, formerly lieutenant governor of Connecticut, formerly president of Wesleyan University, three years.

Frances B. Relick, Newington, formerly secretary of state, two years.

The state commissioner of health, Dr. Stanley H. Osborn, and the commissioner of welfare, Robert J. Smith, are ex officio members of the commission. The new statute directs the commission to "study the problems of care and treatment of the aged, infirm and chronically ill people of the state, plan, construct or purchase, lease or otherwise acquire and staff and operate such buildings as it deems necessary for the care of such persons. Said commission shall fix rates for care at such institutions and shall determine policies and adopt regulations necessary to carry out the provisions of this act." The statute empowers the commission to employ and fix the compensation of a director and such other employees as it may require and make the usual provision for a biennial report of findings, activities and recommendations to the governor and the general assembly. The appropriation originally requested for the project was reduced prior to passage of the bill to \$25,000, which is inadequate for the acquisition of land, buildings or other capital equipment but which will enable the commission to make a thorough and detailed survey of the scope of the problem, the existing facilities and additional components which are needed, in order that recommendations for a progressive program may be brought before the next general assembly.

ILLINOIS

Personal.—Dr. Donald E. Rossiter has been named president of the board of health of Highland Park, succeeding Dr. Morley D. McNeal, resigned.—Dr. Walter H. Baer, Peoria, was to return to his position as superintendent of the Manteno State Hospital November 1. Dr. Edward Ross has been acting superintendent of the hospital since Dr. Baer entered the Army in 1942.—Dr. Ruth E. Church, health officer of Washington County, Iowa, has been named to a similar position for the McDonough-Fulton bicounty health unit, effective about December 1.

CHICAGO

The Fenger Lecture.—The tenth Christian Fenger Lecture of the Institute of Medicine of Chicago and the Chicago Pathological Society will be delivered at the Palmer House on January 14 by Lieut. Col. Baldwin E. W. Lucke, deputy director, Army Institute of Pathology, Office of the Surgeon General. His subject will be "Epidemic Hepatitis."

Dr. Phemister Honored.—To celebrate the twentieth anniversary of his chairmanship of the department of surgery, University of Chicago School of Medicine, residents, present members and past members of the department of surgery gave a dinner December 4 in honor of Dr. Dallas B. Phemister. The surgical residents staff presented a program at Billings Hospital in the afternoon. At an evening banquet a special bound volume of the December issue of the *Annals of Surgery*, which consisted of contributions of Dr. Phemister's pupils and former associates, was presented to him.

LOUISIANA

George McCoy Named Acting Dean at Louisiana.—Dr. George W. McCoy, professor and director of the department of public health, Louisiana State University School of Medicine, New Orleans, has been appointed acting dean. Dr. Wilbur C. Smith, who was named dean in September (*THE JOURNAL*, October 6, p. 470), has resigned.

MASSACHUSETTS

Graduate Course for General Practitioners.—The Lahey Clinic, Boston, sponsored a postgraduate course in medicine for general practitioners November 15-17. Methods currently used in the diagnosis of common clinical problems were covered in lectures and demonstrations by members of the staff of the clinic.

New Dean at Boston University.—Dr. Donald G. Anderson, Boston, recently associated with the distribution of penicillin, has been appointed dean of the Boston University School of Medicine. He succeeds Dr. Charles F. Branch. Dr. Anderson, who is 32 years of age, graduated at Columbia University College of Physicians and Surgeons in 1939.

Personal.—Dr. Charles F. Branch, formerly dean of Boston University School of Medicine, has been named director of Children's Hospital, Boston.—Charles A. Cook, Ph.D., formerly in charge of the Medical Biochemistry Department at the Lambert Pharmacal Company, St. Louis, has been appointed research director of the E. L. Patch Company, Boston. Dr. Cook's work has been concerned with the medical and biologic properties of the vitamins, proteins and amino acids, pituitary hormones and also synthetic and antibiotic chemicals which exhibit antiseptic activity.

MICHIGAN

Alpha Omega Alpha Lecture.—Dr. Isidor S. Ravdin, M. C., A. U. S., gave the Alpha Omega Alpha Lecture at Wayne University College of Medicine, November 15, on "Experiences on the Assam-Burma Border."

Knights of Columbus Post Named for Physician.—The sixty-five new members initiated November 4 by Port Huron Council Number 521, Knights of Columbus, adopted the name of the "Dr. DeGurse Class," honoring Dr. Thomas E. DeGurse, Marine City. The physician recently completed fifty years of practice in Marine City.

Changes in Health Officers.—Dr. Clayton C. Benjamin, Manistee, has resigned as health officer of Mason County to accept a similar position for the city of Port Huron.—Dr. Rolf Lanting, formerly of Gladwin, has been named health officer of Shiawassee County to succeed his wife, Dr. Helen Lanting. Owosso, who has been serving in the position for three years. Dr. Robert E. Flood, Northport, has been appointed director of district number 7 health unit to succeed Dr. Madelene M. Donnelly, Gladwin.

Graduate Course in Internal Medicine.—The department of postgraduate medicine, University of Michigan Medical School, Ann Arbor, will devote a course in internal medicine in January and February to "Clinical Applications of the Basic Sciences." Teaching will be conducted by the preclinical faculty and, to a great extent, by staff members from the clinical departments. The various aspects of the fundamental sciences which have immediate bearing on the practice of medicine will be emphasized. Applications may be addressed to Dr. Howard H. Cummings, chairman, Department of Postgraduate Medicine, University Hospital, Ann Arbor.

NEW HAMPSHIRE

Dr. Frechette Goes to Massachusetts.—Dr. Alfred L. Frechette, secretary and state health officer of the New Hampshire State Board of Health, Concord, has resigned to become health officer of Brookline, Mass. Major John S. Wheeler, formerly deputy health officer in New Hampshire, has been appointed acting health officer as of December 1.

NEW YORK

Tuberculosis Association Observes Silver Anniversary.—The Cattaraugus County Tuberculosis and Public Health Association celebrated its twenty-fifth anniversary October 11 with a banquet at the Olean House, Olean. Dr. Herman E. Hilleboe, Washington, chief of the tuberculosis control division, U. S. Public Health Service, was the guest speaker.

New York City

William Laurence Honored.—William L. Laurence, science reporter of the New York Times, has been given the annual award of the Society of Silurians for the best editorial staff achievement by a New York City newspaper man for 1945. Mr. Laurence won the honor for his articles on the development of the atomic bomb. The award included a scroll and a \$100 war bond. The Silurian Society is composed of active and former newspapermen who served on New York City newspaper editorial staffs twenty-five or more years ago.

Food, Nutrition and World Populations.—The annual dinner and meeting of the New York Academy of Sciences will be held at the Hotel Astor, December 19. "Food, Nutrition and World Populations" will be the theme of the meeting, with Dr. Frank G. Boudreau, director, Milbank Memorial Fund, discussing "Nutrition as a World Problem"; Otto A. Bessey, Ph.D., director of the division of physiology and nutrition, Public Health Research Institute of the City of New York, "Nutrition as an Exact Science," and Charles G. King, Ph.D., scientific director, the Nutrition Foundation, Inc., "The Future of Nutritional Science."

NORTH CAROLINA

Needs of Children in a Postwar World.—North Carolina has been selected as the first state in which the American Academy of Pediatrics will conduct a thorough fact finding survey to determine the needs of children in a postwar world in order that the medical mind may assume the leadership in making available the facilities with which these needs are to be met. Dr. Joseph Lachman, director of the Pulaski County Health Department, has been assigned by the U. S. Public Health Service to the North Carolina Pediatric Society to serve as executive secretary. In December a short questionnaire will be sent to every physician in the state. Four avenues of approach will be followed:

Health studies for children, the survey to cover the extent of quality of such services—child health conferences, school health services, immunization, child guidance and public health nursing.

Distribution, qualification and activities of professional personnel, with the fact in mind that most of the pediatricians are in cities, but, even then, that much of the care of children is given by general practitioners. In this phase of the study, data will be collected on the distribution of pediatricians, general practitioners and specialists. An attempt will be made, through special questionnaires, to estimate the amount of time devoted by general practitioners to the care of children, and it is hoped also to obtain data relating to the size of the case load, outpatients, clinics and laboratories.

Hospital location, cooperation and character of public health facilities available, nervous and mental hospitals, tuberculosis, contagious and convalescent.

Education of physicians with reference to children, including medical schools to determine the quality and quantity for the training of child care. Data will be obtained on staff, curriculums, number of pediatric beds available for teaching and opportunity for study of such pediatric specialties as allergy, rheumatic fever and mental hygiene. One of the most important aspects of the survey will be that of the medical the and the activities of public health, including the providing of doctor and the services to children by state and local health departments, as well as by voluntary agencies. This phase of the survey will include child health conferences, mental hygiene clinics and school health programs as well as public health nursing concerned with children.

Dr. Arthur H. London Jr., Durham, is president of the North Carolina Pediatric Society.

NORTH DAKOTA

New Director of Maternal and Child Health.—Dr. Russell O. Saxvik, who was recently released from service in the Army of the United States, has been appointed director of maternal and child health for the North Dakota State Department of Health. Dr. Saxvik graduated at the Rush Medical College in 1940.

OHIO

The Lower Lecture.—Dr. Charles S. Best, professor of physiology, University of Toronto Faculty of Medicine, delivered the annual Lower Lecture before the Academy of Medicine of Cleveland November 16 on "Hormonal and Dietary Factors in the Pancreas."

Toledo Postgraduate Day.—The twelfth annual Postgraduate Day, held under the auspices of the Medical Institute of the University of Toledo November 2, was designated a memorial to the late Dr. John G. Keller. This custom of honoring a graduate of the old Toledo Medical School has been in effect since the Postgraduate Day was established.

Historical Museum Dedicated.—On October 6 the Cleveland Medical Library Association dedicated the Howard Dittrick Museum of Historical Medicine in honor of its founder, Dr. Howard Dittrick, retiring president of the library association. A feature of the program was the presentation of a portrait of Dr. Dittrick to the library. The picture is the work of Mary Seymour Brooks. The Museum of Historical Medicine was named in honor of Dr. Dittrick last year (*THE JOURNAL*, Dec. 30, 1944, p. 1159). Dr. Dittrick became curator of the museum in 1928 and director in 1935.

Prentiss Foundation Awards \$500,000 for Biochemistry.—The Elisabeth Severance Prentiss Foundation of Cleveland has made a grant which will amount to about \$500,000 to finance a greatly expanded department of biochemistry at Western Reserve University School of Medicine, Cleveland. The money will be paid to the university in quarterly payments over a ten year period, subject to certain conditions. The selection of a department head is now under way. The chair of biochemistry was left vacant recently when Victor C. Myers, Ph.D., was named director of a newly created department of clinical biochemistry (*THE JOURNAL*, August 25, p. 1239). According to an announcement, the school of medicine will follow the British pattern of having one department of biochemistry to carry on research and give instruction in chemistry as it affects all forms of life and another to perform a similar function as it affects more direct clinical observation and the diagnosis of human illness.

WEST VIRGINIA

Changes in Health Officers.—The following physicians have been appointed part time health officers of the places indicated: Charles R. Kessel, Ripley, Jackson County; Perry F. Marks, Walton, Roane County; James W. Stokes, Hinton (part time for the city of Hinton), and Jerome C. Arnett, Rowlesburg, who will serve temporarily as health officer for Preston County in the place of Dr. Charles Y. Moser, Kingwood.

Hospital Field Representative Named.—Mrs. George Fordham, formerly hospital superintendent and director of nurses at Laird Memorial Hospital at Montgomery, has been appointed by Dr. John E. Offner, Weston, state health commissioner, as hospital field representative for the division of maternal and child health. The new office was created to provide nursing supervision to hospitals accepting patients under the E. M. I. C. program.

Association of Pathologists Organized.—The Association of Pathologists of West Virginia was organized in Morgantown, October 26-27, with Dr. Clement C. Fenton, professor and head of the department of pathology, West Virginia University School of Medicine, Morgantown, as president and Dr. William T. McClure, Wheeling, secretary-treasurer. Speakers at the meeting included:

Dr. Fenton, Problem of Technicians.
Dr. Edward J. Van Liere and Gideon S. Dodds, Ph.D., both of Morgantown, Newly Formed West Virginia University School of Medical Technicians.

Dr. Eugene De Angelis, Morgantown, The Use of Plastics to Replace Cover Glasses in Microscope Slide Preparations.
Dr. Walter J. G. Futschar Jr., Charleston, Rocky Mountain Spotted Fever.

Special Society Elections.—Dr. William F. Beckner, Huntington, was elected president of the West Virginia State Conference of Social Workers at the annual meeting held in Charleston early in October. Dr. Leo H. Mynes, Charleston.

director of health service for Kanawha County schools, has been reelected president of the West Virginia Tuberculosis and Health Association for the fifth consecutive year. Other officers elected include Dr. William P. Bittinger, Summerlee, vice president; Miss Mae M. Maloney, Charleston, secretary, and Robert C. Hawkins, Charleston, treasurer.

Personal.—Drs. Frank V. Langfitt, Clarksburg, Walter W. Point, Charleston, and John J. Brandabur, Huntington, have been appointed members of the Public Health Council for terms ending June 30, 1949. The new appointees, who take office immediately, succeed Drs. Morgan T. Morrison, Sutton, Benjamin H. Swint, Charleston, and William C. D. McCuskey, Wheeling, who have served for several years as members of the council.—Dr. Orin R. Yost, Aiken, S. C., has been named superintendent of the Weston State Hospital (mental), Weston, to succeed Dr. Harry A. Garrison, who resigned as superintendent several months ago (*THE JOURNAL*, July 21, p. 893). Dr. H. O. Van Tromp, French Creek, has been acting superintendent since July 1. Dr. Yost was to take over the new work December 1.—Dr. Lawrence F. Boland, Williamson, has been named health officer of Mingo County, succeeding Dr. Sixtus G. Zando.

GENERAL

Special Society Election.—Dr. Eugene M. Blake, New Haven, Conn., was elected president of the American Ophthalmological Society at its meeting in Hot Springs, Va., November 12-14. Dr. John Burke, Washington, D. C., is vice president, Dr. Walter S. Atkinson, Watertown, N. Y., secretary-treasurer, and Dr. Wilfred E. Fry, Philadelphia, editor of the *Transactions*.

Extend Service for Handicapped.—At the suggestion of the Baruch Committee on Physical Medicine, the National Society for Crippled Children and Adults, Chicago, plans to establish immediately a central national registration and placement service for trained specialists in such work who are now in the armed forces and may want to continue their work in civilian life. A director of the employment exchange will be employed who will also be in charge of clearance of information on training facilities and scholarships for all persons, either civilian or military, who wish either to continue or to enter any phase of work for the handicapped.

The Louis Livingston Seaman Fund.—The New York Academy of Medicine announces the availability of the Louis Seaman Fund for the furtherance of research in bacteriology and sanitary science. One thousand dollars is available for assignment in 1945. This fund has been made possible by the terms of the will of the late Dr. Louis Livingston Seaman and is administered by a committee of the academy. The committee will receive applications either from institutions or from individuals up to December 1. Communications should be addressed to Dr. Wilson G. Smilie, chairman of the Louis Livingston Seaman Fund, 1300 York Avenue, New York 21. The fund will be expended only in grants in aid for investigation or scholarships for research in bacteriology or sanitary science. The expenditures may be made for the securing of technical help, aid in publishing original work and the purchase of necessary books or apparatus.

Organic Antimony Compound for Treatment of Filariasis.—Drs. Theodore G. Klumpp, New York, Justus B. Rice, New York, vice president in charge of medical research, Winthrop Chemical Company, Inc., and Dr. Harry M. Rose and James T. Culbertson, Ph.D., both assistant professors of bacteriology at Columbia University College of Physicians and Surgeons, New York, are checking on clinical experiments at the School of Tropical Medicine, San Juan, Puerto Rico, used in organic antimony compounds in the treatment of filariasis. Stabanoce, a new organic antimony compound, and Neostibosan, both developments of the Winthrop Laboratories, have been used in the clinical tests conducted for the past year at the San Juan School of Tropical Medicine. First publication on the experiments was a scientific paper prepared by the Columbia University scientists and read before the meeting of the American Society of Tropical Medicine in Cincinnati November 15.

Pooling of Funds Urged in Health Report.—The pooling of the present separate competitive money raising appeals of the separate health agencies into a national health campaign, which will make for more equitable distribution of funds, is urged in a recent report presented by Selskar M. Gunn, C.P.H., and Dr. Philip S. Platt, Ph.D., New York, through the National Health Council and under the auspices of the Rockefeller Foundation. The report involved field work and

research for three years on 568 agencies in sixty-five cities and twenty-nine states. The 1945 total intake for the fifteen principal health agencies, including their national and local units, amounted to \$58,000,000. This total included \$100,000 raised by the American Heart Association and \$16,500,000 raised by the National Foundation for Infantile Paralysis. There is \$94 available for treatment and research on each case of infantile paralysis, \$22 for each case of tuberculosis, \$8 for cancer and 3 cents for each cardiac case, the condition causing the greatest number of deaths. The report also urged the establishment of an effective health council in every community, representing a voluntary affiliation of all the local health organizations. Although the study credits the private agencies working in the fields of tuberculosis, cancer, mental hygiene, blindness and so on with much of the health progress of the twentieth century, it deplores their lack of central direction and planning. It points out that the individual health organizations have sometimes overlapped and duplicated one another's efforts. The report recommends the expansion of the work of the National Health Council, with a dynamic program and effective field services to function on request for member organizations throughout the country.

Disbursements for Poliomyelitis Care.—Close to \$1,000,000 in emergency aid to poliomyelitis epidemic areas was disbursed by the National Foundation for Infantile Paralysis in forty weeks of this year, Foundation President Basil O'Connor said October 24. Of this amount a little more than 75 per cent went to four states: North Carolina \$229,138, Illinois \$218,200, New York \$198,755.40 and Virginia \$106,092.51. The total for the country was \$986,526. The principal expenses in connection with poliomyelitis epidemics, he continued, are hospitalization, salaries of doctors and other professional personnel, purchase of special equipment and the transportation of patients. Infantile paralysis, he added, is one of the most expensive diseases in medicine. Few families can meet the cost of the average case of poliomyelitis, which is around \$1,000. Funds sent to states supplement resources of the foundation's county chapters, which retain every year, for the care and treatment of local poliomyelitis patients, one half of all contributions in the county to the annual March of Dimes. The other half goes to the national foundation for scientific research, education and emergency aid in epidemics. While there were fewer infantile paralysis cases throughout the country in the first forty weeks of this year than there were for the same period last year, twenty-six states reported higher totals than last year. Utah reported nine times its 1944 total, Texas and Massachusetts almost five times, and Oklahoma, Tennessee and Wyoming more than three times. So far this year \$30,000 in emergency aid has been sent to Utah, which experienced the most severe epidemic, in proportion to its population, of any state in the union. Funds sent to North Carolina, it was explained, are being used not only for victims of this year's outbreaks but for continuing care of patients from previous outbreaks. Tennessee received \$50,000 disbursed under the supervision of Dr. Robert H. Hutcheson, state health director. As of October 6, this year, Tennessee had reported 347 cases, compared with 103 for the entire year of 1944. Many other states too are still caring for victims of the 1944 epidemic, second worst in the nation's history, when 19,272 men, women and children were stricken. In forty weeks of 1945 a total of 10,259 cases have been reported for the United States.

Health Officers Act on Proposed Health Recommendations.—The Association of State and Territorial Health Officers announced the adoption of a resolution recommending that responsibility of school health programs be recognized as a joint responsibility between the health and education department of federal, state and local levels. In general, the resolution pointed out, health education and physical education of school children should be regarded as the primary responsibility of the department of education working in cooperation with and with the assistance of departments of health. The resolution further recommended that appropriate federal agencies be requested to carry out research and demonstrations in order to develop improved techniques for school health medical services and to evaluate existing techniques, carry out surveys to evaluate current practice in this field and determine needs for expansion of services and seek federal funds for the expansion of school health programs in accordance with established needs, such funds to be allotted on a grant-in-aid basis to state health agencies. The proposed establishment of a department of public health and welfare with a cabinet officer at its head was also discussed by the association. If this organization is carried through, the association respectfully

recommends that adequate measures be taken to insure that public health receives sufficient freedom of action to carry on its important function of maintaining optional health for all the people. It is urgent that, if such a combined department is formed, permanent career undersecretaries or assistant secretaries be in charge of the two activities and that they be of equal rank. This is said to be, however, less desirable than the formation of a separate department of public health with a cabinet officer in charge, the association affirms. The association makes this recommendation in the interest of better public health administration on a federal level and the coordination of all civilian public health activities in a single department, thereby rendering liaison and cooperation with the several states and territories the more efficient and effective. This, in turn, would bring about an improvement in general public health work throughout the entire country and enable this department to administer any future legislation pertaining to public health with much greater efficacy, with a smaller administrative overhead for services rendered.

LATIN AMERICA

Health Activities in Latin America.—*Proposed Medical School in Trinidad.*—Work on the establishment of a medical school in Trinidad may be completed by October 1946, officials of the West Indian colony believe, it is reported. Formulation of plans for the creation of the institution will be entrusted to a commission of London University. In addition to furnishing the faculty, McGill University Faculty of Medicine, Montreal, is expected to supervise the activities of the new school. McGill authorities have consented to cooperate. In some quarters London auspices are preferred to the affiliation with Canada, it is reported. It is argued that a degree obtained in an auxiliary of a London institution would be registrable in the United Kingdom and in all West Indian colonies.

Visitors to the United States.—Dr. Fernando Carvalho Luz, Bahia, recently arrived in Miami on the Brazil Clipper of the Pan American World Airways, en route to New York for a year's study in surgery at Columbia University under a fellowship awarded by the Commonwealth Fund.—Dr. Gilberto G. Villela, chief of the division of chemistry and pharmacology, Instituto Oswaldo Cruz, Rio de Janeiro, Brazil, has joined the staff of the University of California Medical School, San Francisco, for the current term, as lecturer in pharmacology, according to the University of California Clip Sheet.—Dr. Aniceto Solares, formerly rector of the University of San Francisco Xavier, Sucre, Bolivia, is visiting the United States as a guest of the department of state. Dr. Solares is an ophthalmologist.

Personal.—Lieut. Col. Chester L. Davidson, M. C., has been named chief of the surgical service at Gorgas Hospital, Ancon, Canal Zone, to succeed Dr. Howard K. Tuttle, who retired recently to end twenty-seven years' affiliation with the Panama Canal Health Department. Colonel Davidson has been on duty with the health department since Jan. 9, 1944, having served as special assistant to Dr. Tuttle since last summer. Dr. Tuttle was assistant chief of the surgical service from 1922 to 1943. He was named chief on the retirement of Dr. Troy W. Earhart. He and his wife will leave Panama to establish residence in Hollywood, Calif.

Mexican Congress of Cancer.—The second Mexican Congress of Cancer of the Third Medical Week of the Occident will be held at Guadalajara, February 3-9. Dr. Manuel Riebeling is president and Dr. Enrique Garcia Ruiz is secretary.

Inter-American Congress on Radiology Postponed.—The second Inter-American Congress of Radiology, scheduled to be held in Havana next January (*THE JOURNAL*, April 21, p. 1068), has been postponed.

Radium Institute.—The Instituto Brasileiro de Radium, with headquarters in the hospital of Dr. Francisco Fernandes Eiras of Rio de Janeiro, was opened on July 23.

Physicians Strike in Argentina.—On October 8 the Argentine Medical Association decided "in principle to effect a partial strike of doctors," newspapers reported. In some of the main hospitals in Buenos Aires a partial strike was already in effect. This crisis was brought about by the dismissal of four doctors belonging to the staff of the Railroad Workers' Hospital who had refused to attend a function in honor of Juan Peron, vice president, organized by the secretary of labor and public welfare. All forty other doctors in the same hos-

pital immediately went on strike as a protest, and their actions have been copied by doctors of other hospitals. According to the plans of the medical association, doctors should refuse to attend any but the most urgent cases and should refuse to check in and out at hospitals, so that the government may not know which doctors are on strike and which are not.

Deaths in Other Countries

Maurice Arthus, at one time professor of physiology at the Faculty of Medicine in Lausanne and director of the Institut de Bactériologie et d'Hygiène, died in Fribourg, Switzerland, in February, aged 83.—**Herbert E. Durham, Sc.D.**, known for research in yellow fever, died in Cambridge, England, October 25, aged 79.—**Dr. Robert D. Gillespie**, physician for psychologic medicine at Guy's Hospital, died in London, aged 47.

Government Services

Regulations Governing Penicillin

All orders for penicillin from American civilian hospitals, U. S. veterans' hospitals and the U. S. Public Health service must be treated by suppliers as though the orders bear CC preference ratings, the Civilian Production Administration announced November 23.

Distributors ordering penicillin for hospital use will receive, on certification, the same preferential treatment. (Orders from army and navy hospitals already receive MM preference ratings.) The action was effected by issuing direction 4 to conservation order M-300. Supplies of penicillin are adequate to meet all essential requirements in this country, officials state. The purpose in issuing the direction is to safeguard hospital supplies in the face of rising foreign demand. The United States is the only large producer of penicillin. The Civilian Production Administration now is working with the Office of International Trade Operations of the Department of Commerce to restore export controls on this drug. Producers of penicillin are required to give CC preferential treatment to the orders covered by this direction, up to 40 per cent of their production in the preceding calendar month or of the estimated production in the current calendar month, whichever is greater. All the penicillin which a producer may purchase for resale is also subject to the direction. Because of the increased production of penicillin in tablet, capsule and ointment form, which has somewhat decreased production in the injection form used by hospitals, the direction requires producers, if possible, to operate their facilities in such a manner as to provide adequate quantities of penicillin in the dosage forms required to fill hospital and certified orders. The same rule applies to persons purchasing penicillin for resale when they possess facilities for preparing the drug in dosage form. Monthly reports of production, stocks and shipments will be required from producers, and from distributors who buy penicillin from producers for resale under the distributors' own labels. Civilian Production Administration officials said that the issuance of this direction will not affect the obligation of suppliers to give first preference to orders bearing AAA (emergency) or MM (military) preference ratings. As an example, they said that orders from Army-Navy hospitals, which bear MM ratings, will take preference over orders from civilian hospitals.

Production of penicillin has increased steadily. The 1945 estimated production, in excess of 8,500,000,000 units, is more than five times the 1944 production of 1,633,000,000 units. Present capacity of the industry, which began commercial manufacturing during the war, is around 800,000,000 units a month, and the prospect is that processing improvements will raise this figure.

Although production did not reach capacity in the summer and early fall, it is now increasing, as these figures show:

Third Quarter Actual Production, 1945		Fourth Quarter Estimated Production, 1945	
July	688,980,000,000 units	October	612,470,000,000 units
August	636,510,000,000 units	November ..	657,960,000,000 units
September ..	586,370,000,000 units	December ...	698,100,000,000 units

Both the quality and the potency of penicillin have risen. Originally, 100 units per milligram was acceptable for clinical use, but the average potency today ranges from 500 to 800 units per milligram. Eighteen months is now the effective life of a unit, compared with a three months life at the beginning of commercial production.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 3, 1945.

The Prime Minister and the Medical Profession

At the Harveian commemoration dinner of the Royal College of Physicians the Prime Minister, Mr. Attlee, in proposing the toast of the college, remarked that Lord Moran, the president, had rendered a special service during the war years when the war cabinet was often anxious about Mr. Churchill because of his vigorous traveling habits. It was always a comfort to them to know that in those expeditions he was in the care of Lord Moran. In regard to the government's proposals for a national health service Mr. Attlee regretted that he was not able to announce them at present, but whatever might be the difficulties of agreeing on the practical means for attaining the ends, the ends themselves were, he believed, approved by the whole country. What the government sought was a service which would be comprehensive in the double sense of being available to every member of the population and of covering every form of medical activity. No patient would be without the treatment he needed through lack of money or lack of organization to provide the necessary facilities. A service is needed in which professional men and women are able to devote themselves to their great calling without financial anxiety and without any feeling of being restricted and overcontrolled by regulations. We need great improvement in our hospital service, in the facilities for diagnosis and treatment outside hospitals, in the number and distribution of medical men, both consultants and general practitioners, and perhaps above all in the planning and organization of the different branches into an integrated whole. The task is not easy but is going to be done. Above all it is realized that for a plan to be successful it must have the help and cooperation of the profession itself. Mr. Attlee believes that the profession is as eager as the government to have a really good service.

A Battlefield Inquest

That valuable publication, the *Army Medical Department Bulletin*, which was issued by the War Office during the war to keep alive a sense of unity and interest among medical officers who received their journals irregularly and after long delays, has reached its final issue. Among the half dozen brief but full and well documented articles is one entitled "Battlefield Inquest." We have had, as shown in previous letters to THE JOURNAL, reports showing the great saving of lives by the new forward surgery. But little was known of the men who died on the battlefield so soon after being picked up that the medical services had no chance of doing anything for them. When the last battle began in Italy an enterprising expedition made its way forward to answer this question by making necropsies before the dead were removed from the battlefield for burial. Twenty-three examinations were made on men found dead on the field and 10 on others who died before operation. The prospects of recovery were assessed as none in 17 of the 33 cases, slight in 9, fair in 4 and good in 3. Four examples will give an idea of the standards applied; Case 1: An open wound into the lung with pneumothorax and hemothorax; brachial artery also divided; prospects of recovery slight. Case 2: Divided femoral artery; prospects of recovery good. Case 3: Two perforations of the jejunum, with 2 to 3 feet prolapsed; two perforations of the stomach and two of the colon; the peritoneum held 1,400 cc. of blood; man survived four and one-half hours; prospects of recovery fair. Case 4: Anterior wall of the heart shot away; prospects of recovery none.

Of the immediate causes of death, hemorrhage was the most important. In 14 of the 33 cases it was the essential factor and in 6 others was second in importance. Of 3 cases regarded as presenting a good chance of recovery, 2 deaths were from hemorrhage and 1 from gas gangrene. Recent work shows that loss of blood is often much in excess of what is supposed and is usually the important factor in deaths attributed to "shock." In extensive or multiple limb wounds loss of blood is often greater than in penetrating wounds of the chest or abdomen. In 13 head wounds nothing was found to call for revision of the present evacuation policy by which a man arrives at a neurologic unit within twenty-four hours of injury. Few men wounded in battle die who might have been saved.

Improved Pay and Conditions of Service for Nurses

The minister of health has stated that the shortage of nurses has reached a critical stage. Wards in general hospitals, sanatoriums and mental institutions all over the country have been closed because of the shortage of nursing staff. Accordingly a new code of higher salaries has been set up in the hope that the shortage of 33,000 can be met in a comparatively short time. The salaries of nurses will be increased by \$200 to \$300 a year. A trained staff nurse will begin at \$600 and ultimately earn \$900 a year. In all cases board and lodging and other emoluments are provided in addition. The ministry of health has also issued a booklet, "Staffing the Hospitals," which increases the attractions to the profession, providing a code which will operate as soon as circumstances permit. Training is to be planned so that nurses have adequate time for study, four weeks paid holiday a year in addition to sick leave and representative councils and a national joint council to safeguard conditions.

PARIS

(From Our Regular Correspondent)

Oct. 30, 1945.

The Reorganization of Public Health Services

Dr. Billoux, minister of public health, reported in September the results of a year's work. The conditions left by the Germans were deplorable. One of the problems was to provide the country with drugs and medical supplies. Of 12,000 pharmacies, 1,326 were damaged and 317 were closed. A number of laboratories and pharmaceutical concerns were damaged. The prevention of epidemics—a great danger because of the repatriation of some 2,000,000 people—was another problem. This danger was overcome, for in June and July 1945 only 190 cases of typhus were reported. Other problems were the organization of centers for undernourished children and the establishment of resorts in France and Germany where French children could spend their holidays; the systematic control of the repatriated, and x-ray examination for the prevention of tuberculosis, which has increased alarmingly.

Blocks of hospitals comprising about 50,000 beds were bought from the Allies for the use of civilians. This was accomplished with the scanty means at the disposal of the minister of public health. Prevention is to be the main concern for the time being. To attain this the minister has in view the reorganization of the local and central services of public health. There will be eight central sections in the Ministry of Public Health: 1. General medicine, which will prepare and control laws concerning the practice of medicine and related professions, the training of nurses and social workers and the sanitary supervision of dwellings. 2. Public medicine for the prevention of epidemics and to provide for sanitary measures in general and rural hygiene in particular. 3. Social medicine, which will organize campaigns against tuberculosis, cancer and rheumatic fever and will promote mental hygiene. 4. A pharmaceutical

section. 5. A section for the protection of maternity, infancy and adolescence. This section will also care for homeless children and delinquent children. 6. A section of mutual help (*Entr'aide sociale*), which will take care of hospital services, the organization of convalescent homes for workers and the coordination of all private and public organizations of assistance. 7. A section for the family, which will maintain the necessary contact with all associations dealing with problems of the family. 8. A temporary section, concerned with matters pertaining to the health of the repatriated and the sanitary measures for damaged regions.

Local services of the Ministry of Public Health will be reorganized. The services will be decentralized: The regional directions will be suppressed and redistributed on a district basis (*base départementale*). A permanent contact between the central and the district services will be established.

Alcoholism

In the *Semaine des hôpitaux* Derobert publishes the following statistics of the decrease of psychiatric diseases due to alcohol:

Years	Hospitalization for Alcoholism	Years	Hospitalization for Alcoholism
1936.....	3,016	1940.....	2,562
1937.....	3,352	1941.....	2,162
1938.....	3,590	1942.....	796
1939.....	3,492	1943.....	626

The same tendency was found at St. Antoine's Hospital, psychiatric ward, for the year 1944:

Years	Total Number of Patients	Admission for Alcoholism
1941.....	432	111
1944.....	239	16

In a preceding letter, attention was called to the decrease of visceral alcoholism and, above all, of hepatic cirrhosis in Paris. A study covering all France, published by the General Institute of Hygiene, has confirmed this fact. In 1941 the persistence of inebriety due to the consumption of wine was found only in the districts of Lyons and Montpellier, both of which are conspicuous for their production of wine.

Another agent favoring inebriety in those districts was the underfeeding from which the inhabitants suffered, together with a concomitant and persisting ingestion of alcohol, which produced speedy hepatic alterations.

The part of wine, as a cause of alcoholism, is emphasized in an inquiry made by P. Perin among 460 physicians in forty-eight districts, recently published in the book "Crusade Against Alcoholism"; 206 physicians charge wine with being the only cause of alcoholism.

Simplified Method of Aschheim-Zondek's Test of Pregnancy

At a meeting of the Society of Endocrinology, Aschheim described a simplified method of the classic Aschheim-Zondek test for pregnancy. The technic is as follows: A single subcutaneous injection of 0.5 cc. of the urine to be examined is made in 2 female rats which have not yet attained puberty. These rats should be 4 to 5 weeks old and weigh 22 to 35 Gm. In seventy-two, eighty-four and ninety-six hours after this injection, vaginal smears of the 2 rats are taken. After sixty-six to seventy-two hours epithelial cells without leukocytes are found. After eighty-four to ninety-six hours keratinous cells appear; these keratinous cells constitute the test of pregnancy. It is unnecessary to kill the animals, as done in the classic pregnancy test, and they can be used for further experiments. Using this method, the author has examined urine of 39 pregnant women, 30 nonpregnant women and 1 of a man with testicular teratoma; the results compared with other pregnancy tests were satisfactory. Up to now the earliest examination has been made forty-one days from the beginning of the last menses. The new

method is simple and economical. Aschheim remarked that this simplified method requires ten minutes to perform as against thirty minutes for the classic method and fifty minutes for the Friedmann-Brouha test on rabbits, which requires the services of two persons.

MOSCOW

(From a Special Correspondent)

Nov. 13, 1945.

Medical Sequelae of War

Dr. Semashko believes that it is important for medical workers and the various departments of public health to study the effects on the Soviet Union of the war just ended. A study of this sort will in all probability explain the fact that Russia has escaped epidemics of disease despite the mass movements of population from fascist occupied regions, despite poor nutrition and lack of housing and fuel. The Soviet Union has been able to prevent epidemics because of the services of the state health organizations. Every citizen is available to him free medical aid in dispensaries, outpatient departments, hospitals, sanatoriums and other medical institutions. Dr. Semashko emphasizes the necessity of uniform planning and action by various organizations and institutions in combating epidemics. Uniformity of planning makes for economy of forces and expenditures. Preventing disease plays an important part in Soviet health services. Adherence to this principle played an important part in wartime in preventing epidemics. Great difficulty was experienced in maintaining cleanliness of inhabited areas on account of shortage of workers and transport. The people themselves in the towns kept their dwellings and cities clean. In heroic Leningrad the streets were kept as clean during the siege as they were in peacetime, thanks to the efforts of the inhabitants. Flaring up of epidemic diseases occurred in certain districts, but they were rapidly eliminated by adoption of quarantine measures. Despite the horrible damage wrought by the fascists in the Ukraine, shortly after the expulsion of the Germans a network of medical institutions was rebuilt so that by January 1945 the number of such institutions was almost up to the prewar level.

Silber's Studies in Immunology

Professor L. A. Silber has devoted twenty-five years of investigation to the subjects of immunity, ultraviruses and malignant tumors. He has written a number of papers on symbiosis of bacteria and viruses. In his work on cancer he was able to separate a virus-like agent. Extracts of newly formed neoplasms, he reported, were capable of converting normal cells into malignant cells. After many years of study on the different forms of encephalitis Silber established in 1944 the existence in Russia of the Scotch encephalomyelitis. Silber's work has been effective in organizing the study of ultraviruses. Because of his initiative and energy, the Council of Peoples Commissars of the Soviet Union set up in 1935 a central virus laboratory which now forms part of the Institute of Experimental Medicine. The plague vaccine produced by Silber proved to be ten times more effective than any of the vaccines produced from dead bacteria. Silber was first to discover that certain ultraviruses, smallpox virus for example, can exist in the yeast in which they have been placed experimentally or in which they are found naturally under conditions that would kill them outside the yeast. This discovery led to a completely new idea as to the manner in which viruses exist in nature. The discovery of tick borne encephalitis in the Soviet Union was likewise made by Silber. He studied the epidemiology of this infection, then new to science, under difficult field conditions in distant Taiga and demonstrated that the disease is transmitted by ticks. He and his associates isolated an ultravirus which causes tick borne encephalitis. This work is a milestone in Soviet virology.

BRAZIL

(From Our Regular Correspondent)

SÃO PAULO, Oct. 15, 1945.

The Santonin Test for Liver Function

Dr. Luis C. Fonseca, associate professor of medicine at the University of São Paulo, has published an important paper in which he reviews the question of the santonin test for the examination of the antitoxic function of the liver and presents the results of an experimental study in "normal" men. The complete paper includes the chemical study of santonin, the physiologic problem of the antitoxic function of the liver, the foundation and technic of the test, the preparation of the colorimetric scale and the physiopathology of the test. Dr. Fonseca describes the use of the test on 50 "normal" persons, the laboratory assay of the results in comparison with the results of other tests and a general discussion of the findings. Dr. Fonseca believes, as several other authors do, that the santonin test has been too hastily evaluated as a good device for ascertaining the antitoxic function of the liver.

Dr. Fonseca decided to use 50 nondiseased robust young persons in whom he carefully studied the elimination curve of the oxysantonin. He performed the test with three different techniques: with free ingestion of liquids (the original procedure proposed by Moukhtar and Djévat), by giving 100 cc. of water every hour and finally by completing the volume of eliminated urine to 100 cc. if the volume was less than 100 cc. or to 150 cc. if the volume was more than 100 but less than 150 cc. The plotting of two or three curves of elimination for each of the 50 persons studied clearly demonstrated that the degree of the colorimetric scale varies inversely with the dilution of the oxysantonin, thus showing the importance of the volumetric curve, which is closely related to water metabolism. It is easy to conclude that, whenever this metabolism is disturbed, even without the participation of the liver, false results may be obtained with the santonin test. In patients with cirrhosis, particularly the acitogenous cirrhosis, there is a disturbance of water balance. A determination of the antitoxic function of the liver is naturally indicated for a diagnostic and prognostic objective. Dr. Fonseca stresses that this is a paradoxical situation since the conditions present should be considered contraindications to the use of the test. In cases of jaundice with elimination of large amounts of biliary pigments which give a deep color to the urine, the intensely red results of the test are of difficult colorimetric classification. The careful study of the 123 curves obtained by the use of the various techniques enables the author to conclude that the elimination greatly varies with the particular technic used.

Hospital News

A new army hospital has been erected at Porto Alegre, state of Rio Grande do Sul. The building is a five story monobloc of reinforced concrete, provided with all the modern facilities, including air conditioning and heating. It cost about a million United States dollars. There are 600 beds distributed in an area of 6,000 square meters (6,562 square yards). The new hospital is under the direction of Lieut. Col. Ismar T. Mutel.

The "Centro de Clinicas do Distrito Federal" (Clinical Center of the Federal District) will build a large general hospital in the city of Rio de Janeiro.

The Brazilian Institute of Cancer has decided to build a specialized cancer hospital in the city of Rio de Janeiro. The laying of the cornerstone was an imposing ceremony attended by Dr. Dollinger da Graca, president of the institute, who delivered a speech in which he pointed out the importance of the problem of cancer in Rio de Janeiro and described the main features of the hospital and its services.

A radium and x-ray division has been inaugurated at the Eiras Hospital of Rio de Janeiro under the direction of Dr. Jorge Jabour. Drs. Edgar Drolhe, Ernani Bueno and Pena de Azevedo are in charge respectively of the x-ray, the radium and the pathology services of the division.

The Nossa Senhora das Dores Hospital of Rio de Janeiro has recently inaugurated a radium service, provided with 50 centigrams of radium, acquired in the United States at the cost of \$21,000. The hospital is under the direction of Dr. Ary Almeida Silva.

The Rio de Janeiro City administration has appropriated a sum corresponding to \$50,000 to improve the São Sebastião Hospital for acute contagious diseases and for similar purposes in the Torres Homem Tuberculosis Hospital.

South American Meeting of Microbiologists and Parasitologists

Dr. Hugo Vaccaro of Chile, Dr. Juan E. Mackinnon of Uruguay and Dr. Carlos S. Lacaz of São Paulo have decided to promote a meeting of South American specialists in microbiology, parasitology and tropical pathology. Among the most important subjects to be discussed at the meeting are American trypanosomiasis, schistosomiasis, jungle yellow fever and South American shigelloses, rickettsioses and blastomycoses. The University of Chile, the Catholic University of Santiago, the Concepción University and the São Paulo Bacteriologic Institute, the Institute of Veterinary Investigations and the São Paulo State Department of Health have already decided to send representatives to the meeting. Drs. Battistini, Hercelles and Colchon from Lima, Peru, Dr. Wandenberg of Quito, Ecuador, Drs. Navarez and Rodrigues from Guayaquil, Dr. Iragorri from Caracas and Drs. Bonilla and Patiño Camargo from Bogotá have promised to take part in the meeting. An organizing committee has been formed, which includes Drs. Juan Noé, Julio San Miguel, Hugo Vaccaro and Carlos Garcez.

The Walter Reed Medal Awarded to the Brazilian Government

The American Society of Tropical Medicine has awarded the Walter Reed Medal to the Brazilian federal government in recognition of the "invaluable work" accomplished by that government in the sphere of preventive medicine. The society likewise awarded a diploma to Hon. Gustavo Capanema, minister of health of Brazil. In forwarding the medal to the Brazilian Department of State, Mr. Carlos Martins, Brazilian ambassador in Washington, pointed out that the award had a special significance for Brazil and its minister of health, since this was a distinction awarded thus far only to the Rockefeller Foundation (1936), to Dr. William B. Castle (1939), to Dr. Herbert C. Clark (1940), and to Dr. Carlos J. Finlay (1942). Minister Capanema presented the medal to the National Museum of History of Rio de Janeiro.

Marriages

ROBERT NORMAN BUCHANAN JR., Hendersonville, Tenn., to Miss Rachel Blackman of Wartrace, in Nashville, September 15.

ROBERT C. POLSON, Lawrence, Kan., to Miss Marjorie Simonson in Santa Barbara, Calif., September 15.

CARLETON DOUGLAS ROWLEY, Walton, N. Y., to Miss Mary Elizabeth Patti of Batavia, September 28.

FORREST J. PINKERTON to Mrs. Florence Helmick Macaulay, both of Honolulu, Hawaii, September 14.

HARRY KIRBY SHIFLER to Miss LuVern Gray, both of Des Moines, August 22.

Deaths

Joseph McFarland ☉ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1889; born in Philadelphia, Feb. 9, 1868; since 1936 emeritus professor of pathology at his alma mater and since 1940 professor of general pathology at the school of dentistry at Temple University; served as professor of pathology at the Woman's Medical College of Pennsylvania, Evans Dental Institute and the Veterinary Medical School of the University of Pennsylvania; professor of pathology and bacteriology at the Medico-Chirurgical College from 1896 to 1916; secretary of the Section on Pathology and Physiology of the American Medical Association from 1901 to 1903 and chairman, 1903-1904 and member of the House of Delegates in 1905 and in 1906; organizer and director of the Mulford Biological Laboratory from 1894 to 1900; fellow of the American College of Physicians, College of Physicians of Philadelphia, Academy of Natural Science and the Philadelphia Academy of Stomatology; member of the American Association of Pathologists and Bacteriologists; associate member of the American Society of Clinical Pathologists; major in the medical corps of the U. S. Army during World War I, serving as chief of the laboratory service at Base Hospital, Camp Beauregard, Alexandria, La., at General Hospital number 9, Lakewood, N. J., General Hospital number 14, Fort Oglethorpe, Ga., and director of laboratory instruction in the Medical Officers Training Corps at Camp Greenleaf; consulting pathologist at the Philadelphia General Hospital, Doctors Hospital and the American Oncologic Hospital; author of nine editions of "Pathogenic Bacteria and Protozoa," two editions of "Text-Book of Pathology," five editions of "Biology: General and Medical," "Fighting Foes Too Small to See" and "Surgical Pathology"; co-author of "The Breast"; in 1942 was presented with the 1941 Strittmatter Award of the Philadelphia County Medical Society; died September 22, aged 77, of coronary thrombosis.

Ellsworth Eliot Jr., New York; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; born in New York June 6, 1864; member and past president of the American Surgical Association and the New York Surgical Society; member of the American Medical Association and the Society of Clinical Surgery; served as chairman of the surgical section of the New York Academy of Medicine; a major in the medical corps of the U. S. Army during World War I, serving at Chateau-Thierry, St. Mihiel and the Argonne; for two months, after the armistice, was director of surgery for the American Expeditionary Forces evacuation hospital in France; formerly professor of clinical surgery at his alma mater, where he gave a popular course to medical students known as "Eliot's Quiz"; served as professor of clinical surgery at Cornell University; director of surgery at the Knickerbocker Hospital from 1929 to 1937 and chief of surgery at the Vanderbilt Clinic from 1895 to 1900; author of "Yale in the Civil War"; served on the staffs of Gouverneur Hospital, Northeastern Dispensary, Lawrence Hospital, Bronxville, White Plains (N. Y.) Hospital and the Presbyterian Hospital, where he died November 2, aged 81.

Benjamin Austin Cheney ☉ New Haven, Conn.; Yale University School of Medicine, New Haven, 1890; born in Joliet, Ill., June 10, 1867; past president of the New Haven County Medical Society and the New Haven City Medical Society; member of the Connecticut Academy of Arts and Sciences; fellow of the American College of Surgeons; formerly assistant in obstetrics and gynecology, instructor in obstetrics and gynecology and assistant professor of obstetrics and diseases of women and children at his alma mater; at one time owner of a hospital bearing his name; consulting surgeon, Griffin Hospital, Derby; consulting surgeon and member of the board of governors at the Charlotte Hungerford Hospital, Torrington; member of the medical advisory board of the Neuro-Psychiatric Institute of the Hartford Retreat in Hartford; one of the founders of the Grace Hospital, where he had been chairman of the board until early in 1945, when he became honorary chairman following the merger of the Grace and New Haven hospitals; died in the Grace Hospital October 10, aged 78, of coronary occlusion.

Edward O. Morrow ☉ Canton, Ohio; Starling Medical College, Columbus, 1887; past president of the Stark County Medical Society; a member of the staffs of the Mercy and Aultman hospitals; laid the cornerstone in the winter of 1943 for the new wing to Aultman Hospital as the only surviving physician who had served on the first staff in 1937; when he completed fifty years in the practice of medicine, was honored

by the Canton Medical Library Association, of which he was one of the founders; died August 26, aged 80, of coronary sclerosis.

Wilbur Ogden Arnold ☉ West Palm Beach, Fla.; Emory University School of Medicine, Atlanta, 1923; past president of the Palm Beach County Medical Society; served during World War I; on the staffs of the Good Samaritan and St. Mary's hospitals; died August 23, aged 47.

James Meade Atkinson Jr. ☉ Port Huron, Mich.; University of Michigan Medical School, Ann Arbor, 1930; interned at the Mercy Hospital in Jackson; formerly chief resident at the Woman's Hospital in Detroit; died July 24, aged 47.

John Andrew Belch, Syracuse, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1889; formerly on the staff of the Crouse-Irving Hospital; on the staff of the Onondaga General Hospital where he died August 18, aged 82, of general arteriosclerosis.

Howard Spencer Brasted ☉ Hornell, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1914; vice president of the Seventh District Branch of the Medical Society of the State of New York; fellow of the American College of Physicians; on the staffs of the Bethesda Hospital and the St. James Mercy Hospital, where he died August 28, aged 57, of coronary thrombosis.

George A. Clark, Wilkes-Barre, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1885; member of the American Medical Association; served two terms as city physician; died in the Wilkes-Barre General Hospital August 6, aged 83, of carcinoma of the stomach and acute dilatation of the heart.

John Hession Conway ☉ Cheyenne, Wyo.; Bellevue Hospital Medical College, New York, 1892; served as city health officer and county physician; for many years affiliated with St. John's Hospital and the Memorial Hospital of Laramie County; at one time vice president of the Citizens National Bank of Cheyenne; died August 10, aged 74, of coronary thrombosis.

Harrison Taylor Cronk, New York; Bellevue Hospital Medical College, New York, 1894; served during World War I; died in the Bellevue Hospital August 17, aged 74, of angina pectoris.

James Michael Dinnen, Fort Wayne, Ind.; Rush Medical College, Chicago, 1879; member of the House of Delegates of the American Medical Association in 1913 and 1914; for many years chief surgeon for the Nickel Plate Railroad; died August 14, aged 88, of cerebral hemorrhage.

John William Dunn, Safety Harbor, Fla.; St. Louis University School of Medicine, 1905; served during World War I; formerly on the staff of the Lincoln State School and Colony in Lincoln, Ill.; died in the Veterans Administration Facility, Oteen, N. C., August 23, aged 63, of pulmonary tuberculosis.

James Weatherwax Graves, Herkimer, N. Y.; University of Vermont College of Medicine, Burlington, 1908; past president of the Herkimer Academy of Medicine; county coroner and health officer; served during World War I; on the staffs of the Herkimer Memorial Hospital in Herkimer and the Faxon Hospital in Utica; found dead August 23, aged 61, of coronary thrombosis.

Edward Thomas Wade Hall ☉ Weston, W. Va.; University of Maryland School of Medicine, Baltimore, 1885; honorary member of the West Virginia State Medical Association; captain in the medical corps of the U. S. Army during World War I; founded Hall's Hospital at Freemansburg; co-founder of the Weston City Hospital; died October 7, aged 81, of uremia.

James Foster Hasbrouck, Pasadena, Calif.; Columbia University College of Physicians and Surgeons, New York, 1894; also a dentist; formerly professor of exodontia at the New York University Dental School and visiting oral surgeon at the Bellevue Hospital, both in New York; served as trustee of the village of Larchmont, N. Y.; died October 13, aged 75, of heart disease.

Philip Tucker Hodgskin, Rockville Centre, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1927; diplomate of the National Board of Medical Examiners; member of the American Medical Association; died in Lincoln, Neb., July 18, aged 43.

Lawrence Nicholas Host ☉ Detroit; Marquette University School of Medicine, Milwaukee, 1915; served in the medical corps of the U. S. Army during World War I; on the staffs of St. Joseph's Mercy and the Deaconess Evangelical hospitals; died August 23, aged 53, of coronary thrombosis.

Alexander William Jacobs, New York; Columbia University College of Physicians and Surgeons, New York, 1915; specialist certified by the American Board of Radiology, Inc.; member of the American College of Radiology; served in the medical corps of the U. S. Army during World War I; at one time assistant physician at the New York City Cancer Institute; on the staffs of the Sydenham and Lebanon hospitals; died in the Mount Sinai Hospital August 8, aged 52, of leukemia.

Douglas P. A. Jacoby * Newport, R. I.; Starling Medical College, Columbus, 1894; member of the American Academy of Ophthalmology and Otolaryngology; retired from the Rhode Island State Guard as a brigadier general after having served for several years as a colonel in the Newport Artillery Company, which he was instrumental in reorganizing; chief of the eye, ear, nose and throat department of the Newport Hospital, where he had been president of the board of trustees; died August 25, aged 72, of coronary thrombosis.

Joseph J. Jonikaitis * Detroit; Loyola University School of Medicine, Chicago, 1916; on the staff of the Lincoln Hospital; died July 20, aged 60, of heart disease.

Ferdinand Michael Jordan * Rochester, Minn.; University of Pennsylvania School of Medicine, Philadelphia, 1925; a fellow in medicine at the Mayo Foundation from 1926 to 1931; member of the Medical Society of the State of New

Fred Covington Jordan, Phoenix, Ariz.; Drake University College of Medicine, Des Moines, 1908; member of the American Medical Association; died July 29, aged 61, of coronary occlusion.

William Frank Long, Sulphur Springs, Texas; University of Tennessee College of Medicine, Memphis, 1915; member of the American Medical Association; city and county health officer; died August 12, aged 52, of virus pneumonia.

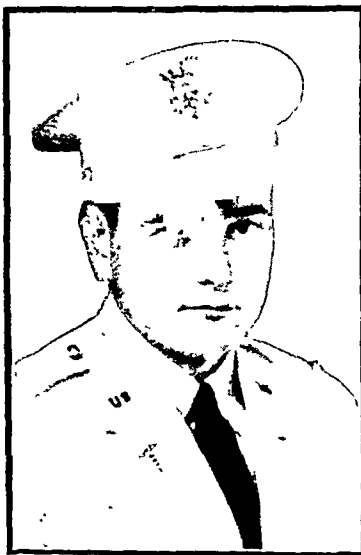
Frank Sheridan Lott * Bexley, Ohio; Ohio Medical University, Columbus, 1901; founder and for many years chief of staff of St. Clair Hospital, Columbus; formerly surgeon for the Columbus division of the Pennsylvania Railroad; died July 31, aged 81, of heart disease.

Jonathan Tamblyn Male, Yampa, Colo.; University of Buffalo School of Medicine, 1898; member of the American Medical Association; for many years a druggist; died in the Colorado General Hospital, Denver, July 15, aged 76, of post-operative shock following amputation of the right leg.

Joseph Denegre Martin, New Iberia, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1903; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; served on the faculty of his alma mater and on the staffs of the Southern



CAPT. WALTER F. H. BARTZ
M. C., A. U. S., 1913-1944



CAPT. NEIL MAYNARD BURR
M. C., A. U. S., 1915-1944



LIEUT. (JG) THEODOR R. CURBY
(MC), U.S.N., 1919-1945

York; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the National Gastroenterological Association; served on the staff of the Grasslands Hospital in Valhalla, N. Y.; died August 14, aged 43, of uremia and polycystic kidneys.

Pacific Hospital and Touro Infirmary, New Orleans, where he died July 6, aged 66.

Duncan McLean, Sacramento, Calif.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1891; died August 13, aged 88.

KILLED IN ACTION

Walter Frederick Henry Bartz, Youngstown, Ohio; Ohio State University College of Medicine, Columbus, 1939; interned at the Youngstown Hospital; began active duty in the medical reserve corps of the U. S. Army as a first lieutenant on May 5, 1941; promoted to captain on Dec. 24, 1941 of the medical corps, Army of the United States; taken a prisoner when Corregidor fell in 1942; died in the South China Sea Oct. 24, 1944, aged 30, while on board a Japanese prison ship which was sunk.

Neil Maynard Burr, Guide Rock, Neb.; University of Nebraska College of Medicine, Omaha, 1939; interned at the University of Nebraska Hospital in Omaha and served a residency at the Cleveland Clinic Foundation Hospital in Cleveland; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army on Nov. 5, 1940; promoted to captain in the medical corps, Army of the

United States, on Dec. 31, 1941; trained at Camp Shelby, Miss., with the medical detachment to the 147th Infantry of the 37th division; went to the Philippines in August 1941 and was stationed at Fort McKinley with the 12th medical battalion; captured on Bataan and held prisoner until Sept. 5, 1944; died in the South China Sea Oct. 24, 1944, aged 29, while on board a Japanese prison ship which was sunk.

Theodore Roosevelt Curby, Acting Assistant Surgeon, Lieutenant (jg), U. S. Navy, Houston, Texas; Baylor University College of Medicine, Dallas, Texas, 1944; interned at the Naval Hospital in San Diego; entered the U. S. Navy in March 1944; assigned as medical officer aboard a destroyer in December 1944 and saw combat service in the Iwo Jima and Okinawa campaigns; died in the Asiatic area April 28, aged 26.

Charles Edgar McMehen, Berkley, Mich.; Western University Faculty of Medicine, London, Ont., Canada, 1912; served overseas with the Canadian army during World War I; died in the Harper Hospital, Detroit, July 6, aged 58, of coronary thrombosis.

Arthur George Miller * Hobart, Ind.; Loyola University School of Medicine, Chicago, 1922; served in France during World War I; on the staffs of the Methodist and St. Mary's Mercy hospitals in Gary and the Porter Memorial Hospital in Valparaiso; served as deputy county coroner and health officer of Hobart; died August 2, aged 52, of coronary thrombosis.

William Franklin Simmons, Gilmore, Ark. (licensed in Arkansas in 1903); died August 29, aged 72, of chronic nephritis.

Carroll Smith * St. Louis; Rush Medical College, Chicago, 1904; professor of surgery at St. Louis University School of Medicine; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; on the staffs of St. Mary's, St. John's and Alexian Brothers' hospitals; died in University City September 6, aged 67.

Mabel Simis Ulrich, Minneapolis; Johns Hopkins University School of Medicine, Baltimore, 1901; formerly regional director of the American Red Cross for Minnesota, the Dakotas and Montana; member of the state board of health and city board of public welfare; on the editorial staff of the *Journal-Lancet*; died in Otisville, August 12, aged 69, when she accidentally fell from a cliff.

Gordon Fitzhugh West * Camden, N. J.; Jefferson Medical College of Philadelphia, 1919; fellow of the American College of Surgeons; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; president of the Camden County Medical Society; on the staff of the Cooper Hospital, where he died July 26, aged 52, of coronary thrombosis.

Vincent Hugh Williams, Owego, N. Y.; Syracuse University College of Medicine, 1927; interned at the Binghamton City Hospital in Binghamton, where he served a residency; died August 27, aged 43, of auricular fibrillation, chronic cardiac valvular disease and hypertension.

George Lamont Wright, Syracuse, N. Y.; Syracuse University College of Medicine, 1911; member of the American Medical Association; instructor in clinical surgery at his alma mater; served as president of the International Association of



LIEUT. COL. WILLIAM RINEY CRAIG
M. C., U. S. A., 1896-1944



LIEUT. ERNEST DANIEL WENBERG
M. C., A. U. S., 1916-1944



CAPT. BILLY TRUE WICKENS
M. C., A. U. S., 1913-1944

Walter John Smith, Columbus, Ohio; Medical College of Ohio, Cincinnati, 1902; served during World War I; chief of the division of communicable diseases, state board of health; died August 16, aged 67.

Fire and Police Surgeons and Medical Directors of Civil Service Commissions; surgeon for the city fire department; associate surgeon of St. Joseph's Hospital; died July 22, aged 59, of cerebral hemorrhage.

KILLED IN ACTION

William Riney Craig * Lieutenant Colonel, M. C., U. S. Army, Washington, D. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1926; fellow of the American College of Surgeons; received his commission in the U. S. Army in 1926; promoted to the temporary rank of lieutenant colonel on Dec. 19, 1941; from 1926 to 1929 served at the William Beaumont General Hospital in El Paso, Texas; attended the Army Medical School and Field Service School for one year; later stationed at Gorgas Hospital in Panama Canal Zone and Fort Sam Houston General Hospital in Fort Sam Houston; commanding officer of the hospital at Fort Douglas, Utah, before going to the Philippines in January 1941; chief of the surgical service at Sternberg General Hospital in Manila at the time of the Japanese attack on the Philippines; served as executive officer of the 7,000 patient hospital number 2 on Bataan and was a survivor of the Bataan death march and medical officer in charge during the two and a half years he was imprisoned at Cabanatuan;

awarded the Purple Heart posthumously; killed in Subic Bay, Luzon, P. I., Dec. 15, 1944, aged 48, when a Japanese vessel on which he was being transported was bombed and sunk.

Ernest Daniel Wenberg, West De Pere, Wis.; University of Wisconsin Medical School, Madison, 1940; interned at Colorado General Hospital in Denver; began active duty as a first lieutenant in the medical corps, Army of the United States, on Feb. 21, 1944; killed in action in Stalag Dec. 23, 1944, aged 28, while a prisoner of war of Germany.

Billy True Wickens, Strawn, Texas; University of Texas Medical Branch, Galveston, 1940; served a residency at the John Sealy Hospital in Galveston and an internship at the Scott and White Hospital in Temple, Texas; began active duty as a first lieutenant in the medical corps, Army of the United States, on May 30, 1942; promoted to captain; died in the European area Nov. 5, 1944, aged 31, of wounds received in action.

Correspondence

CLAVACIN

To the Editor:—The editorial on clavacin in THE JOURNAL, September 22, in which it is suggested that this antibiotic be used in local ringworm infections, is of great interest. I have for some time been using streptothricin (antibiotic from *Actinomyces lavendulae*-Waksman 1942) for mild interdigital epidermophytosis in which the objective symptoms consist only of scaling with or without fissuring, in the following formula:

Streptothricin	5,000 units
Triethanolamine	0.2 cc.
Greaseless base	30.0 cc
(Burroughs Wellcome)	

If the streptothricin ointment is used in the condition indicated, the scaling and fissuring disappears in four or five days and the skin will continue to remain smooth as long as the streptothricin ointment is used. Lapse in the use of the ointment is followed by gradual return of the scaling, thus indicating fungistatic but partial or no fungicidal activity. The nature of this application indicates probable lack of local sensitizing and certainly non-irritating properties and for this reason should be the preferable one for the mild types of interdigital epidermophytosis seen in diabetic patients, in whom irritating as well as sensitizing chemicals are best avoided. The ointment, without streptothricin, is of no value.

SIGMUND S. GREENBAUM, M.D., Philadelphia.

TETANUS IMMUNIZATION

To the Editor:—One of the problems concerning returned servicemen which should be brought to the attention of all civilian physicians is the administration of prophylactic doses of tetanus antitoxin.

I recently saw a discharged veteran who suffered a minor laceration of the thumb in an industrial accident. A physician administered 1,500 units of tetanus antitoxin, which was followed in four days by a moderately severe local and systemic serum reaction, causing a loss of three days' working time in addition to that attributable to the original injury. This patient had seen overseas duty and had received the initial tetanus toxoid immunization and subsequent stimulating doses. At the time of his injury he should have been given 1 cc. of tetanus toxoid. The injection of tetanus antitoxin and the subsequent incapacitating reaction were entirely unnecessary. Tetanus toxoid causes little or no reaction.

The record of tetanus toxoid immunization appears on the service discharge papers which most veterans carry on their person. I believe that overseas duty is invariably evidence of tetanus toxoid immunization. In any case, a man should be questioned concerning tetanus toxoid immunization in the service before being given tetanus antitoxin.

ABRAHAM FREEDMAN, Major, M. C., A. U. S.

PAROXYSMAL TEMPORAL HEADACHE

To the Editor:—Referring to Dr. S. B. Nadler's article on "Paroxysmal Temporal Headache" (THE JOURNAL, September 29, p. 334), I wish to call attention to my experience with 4 cases during the past year. Each case pre-ented the clinical picture of paroxysmal hemicephalalgia as described by Dr. Nadler, with the major distribution in the temporal area. The pain was dramatically relieved by procaine infiltration of the great occipital nerve at a point corresponding to the point of maximum tenderness in the suboccipital area on the same side. Pain in each case was permanently relieved without any surgical intervention or arterial section.

DAVID A. NEWMAN, M.D., West Palm Beach, Fla.

ROENTGEN'S LABORATORY

To the Editor:—It has occurred to me that it would be a matter of interest to physicians in general, as well as to radiologists in particular, to know something of the present condition of Roentgen's laboratory in Wurzburg, Bavaria. No doubt many have wondered about its fate as I did when I read last April of the push by our armies in that direction toward Nuremberg. The city was bombed and largely reduced to rubble by incendiaries plus high explosives and fought over as well, but fortunately for the mementoes of Roentgen the Physical Institute of the university which houses his laboratory and historical collection escaped with only minor damage such as shattered windows, broken slate and loosened plaster.

I have visited the institute several times this summer and am happy to report that on the hundredth anniversary of Roentgen's birth, and the fiftieth of his great discovery, the scenes of his research, as well as the apparatus he employed, remain undamaged for him who would journey there to see them.

LEWIS E. EITER, Major, M. C., A. U. S.,
115th General Hospital, A. P. O. 758.

CITATION FOR 20TH GENERAL HOSPITAL

To the Editor:—There have been numerous inquiries which I have received about the statement on page 621 of THE JOURNAL, October 27, concerning the 20th General Hospital. The statement should have read that the 20th General Hospital was recently commended, the citation being addressed to Brig. Gen. I. S. Ravdin from the then commanding general of the India-Burma theater, Lieut. Gen. Dan. I. Sultan: "Under extremely difficult climatic conditions and in an area devoid of practically everything usually considered necessary for the construction and operation of a general hospital, you have built an institution that has been complimented by every one who has visited it. The record of the 20th General Hospital would be outstanding in any theater of operations. Much of this achievement can be attributed to your fine qualities of leadership, but your officers, including your nurses and all of your men, have shown a devotion to duty which is worthy of the highest praise."

I. S. RAVDIN, M.D., Philadelphia.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, Dec. 1, page 980.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Various Centers, Feb. 4-6. Part III, Various Centers, March. Exec. Sec. Mr. E. S. Elwood, 225 S. Fifteenth St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY & SYPHILOLOGY: Written, Group A, April 22. Oral, Group A and B, June 6-8. Final date for filing application is March 1. Sec., Dr. George M. Levy, 66 E. 66th St., New York 21.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: Oral, Chicago, May 27. Final date for filing application is Feb. 1. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago 12.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Jan. 18-22 and Los Angeles, Jan. 28-Feb. 1. Sec., Dr. S. Judd Beach, 56 Erie Rd., Cape Cottage, Me.

AMERICAN BOARD OF OTOLARYNGOLOGY: Spring 1946. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: Oral, New York, Dec. 20-22. Chicago, May 24-25. Final date for filing application is February 1946. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., N. W., Washington 6, D. C.

AMERICAN BOARD OF UROLOGY: Written, Various centers, Dec. 9. Oral, Chicago, February 1946. Sec., Dr. Gilbert I. Thomas, 1409 Wilton St., Minneapolis 4.

POSTGRADUATE CONTINUATION COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

Compiled by the Council on Medical Education and Hospitals for Period Jan. 1, 1946 to July 15, 1946

Medical schools, hospitals, state medical societies and other medical educational institutions and organizations are providing the Council with a growing body of information on courses designed primarily to meet the needs of returning medical officers. These have been incorporated into the lists on these pages. They are not specifically designated for veterans, since most if not all of them may also be open to interested civilian physicians. Furthermore, all courses listed which were not designed primarily for physician veterans are also open to qualified returning medical officers.

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Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ALLERGY (See also Dermatology and Syphilology)			
Cook County Graduate School of Medicine, 127 South Honore Street, Chicago 12	Allergy	1 month, monthly	\$200
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11	Allergy	May 13-17, 1946, 1 week	Registration 6 Tuition 25
At: J. H. Pratt Diagnostic Hospital and Boston Dispensary			
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Allergy	April 6, 1946, 8 weeks	20
At: Kings County Hospital			
Columbia University Faculty of Medicine, 630 West 168th St., New York 32	Recent Advances in Allergy	March 11-15, 1946, 5 days	30
At: Mount Sinai Hospital			
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Allergy	Jan. 4-Feb. 15, 1946, 2 months	25
	Allergy	April 1-10, 1946, 8 weeks full time	200
	Symposium on Allergy	Jan. 7-11, 1946, 5 days, full time	100
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 165th St., New York	Allergy	2 months, arranged	50
American College of Physicians, 4300 Pine St., Philadelphia 1	Allergy	Not determined	Members 20 Non-Members 40 Physicians in service free None
At: Location not determined			
Vaughan Memorial Clinic, 201 W. Franklin St., Richmond, Va.	Fellowship in Allergy	6 months to 1 year, beginning Jan. 1 and July 1 each year	
ANATOMY			
Cook County Graduate School of Medicine, 127 South Honore Street, Chicago 12	Surgical Anatomy on Cadaver	2 weeks, beginning Feb. 11, March 11, April 8, May 6, June 3, July 15	125
Indiana University School of Medicine, 1010 West Michigan St., Indianapolis 7	Course in Basic Sciences of Anatomy, Physiology and Pathology	6 months, tentative	Not stated
University of Michigan Medical School, Department of Post-graduate Medicine, 233 East Ann St., Ann Arbor, Mich.	Anatomy	Feb. 25-June 6, 1946, once weekly	30
Wayne University College of Medicine, 1536 St. Antoine St., Detroit 1	Advanced Dissection	Arranged	20
	Advanced Histology	Arranged	20
	Regional Dissection	10 weeks, arranged	20
	Evolution of the Human Body	1 quarter, arranged	30
Creighton University School of Medicine, 306 N. 11th St., Omaha	Anatomy	Arranged	6. I. Bill of Rights and free 200
	Applied Anatomy of the Head and Neck	100 hours, arranged	
	Applied Anatomy of the Ear, Nose and Throat	80 hours, arranged	275
	Applied Anatomy of the Lower Extremity	60 hours, arranged	115
	Applied Anatomy for the Orthopedic Surgeon	100 hours, arranged	275
	Applied Anatomy for the Anesthetist	100 hours, arranged	275
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 165th St., New York	Applied Anatomy of the Thorax	120 hours, arranged	275
	Applied Anatomy of the Urogenital System	100 hours, arranged	205
	Applied Anatomy of the Upper Extremity	60 hours, arranged	115
	Applied Anatomy of the Abdomen	120 hours, arranged	
Duke University School of Medicine, Durham, N. C.	Anatomy	Full time, quarterly	either sex 200 both sexes 200
University of North Carolina School of Medicine, Chapel Hill, N. C.	Anatomy	Arranged	None 27

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1 1946 to July 15 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ANESTHESIOLOGY (See also Obstetrics and Gynecology)			
George Washington University School of Medicine, 1300 H St N W., Washington 5, D C	Intensive Refresher Course in Anesthesiology	1 week, April 4-13	\$ 50
University of Georgia School of Medicine, University Place, Augusta, Ga	General Anesthesia (Inhalation and Intravenous)	2 weeks, arranged	10
At Various Hospitals	Regional Anesthesia	2 weeks, arranged	150
At University Hospital	Inhalation Anesthesia	1 month, every month	200
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Anesthesia	2 weeks, arranged	100
Columbia University—At New York Post Graduate Medical School, 305 East 20th St., New York 3	Anesthesia	2 months, arranged	Not stated
New York Polyclinic Medical School and Hospital, 345 W 50th St., New York 19	Applied Anesthesia	6 weeks, arranged	Not stated
	Anesthetic Technique	12 sessions, arranged	7
	Regional Anesthesia	3 months full time	Half fee for physicians in service 700
New York University College of Medicine, 477 First Ave., New York 16	Anesthesia	6 months to 1 year, Spring 1946	Half fee for physicians in service 350
At Beth Israel Hospital	Anesthesia		
Duke University School of Medicine, Durham, N C	Anesthesiology	3 or 6 weeks, arranged	None
University of Texas School of Medicine, Galveston, Texas	Anesthesiology	3 to 6 weeks, arranged	Arranged
ARTHRITIS			
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave Brooklyn 2	Arthritis	April 17, 1946, 8 sessions	20
Columbia University—At New York Post Graduate Medical School, 305 East 20th St., New York 3	Arthritis and Allied Rheumatic Disorders	Jan 8 Feb 26, 1946, 2 months, part time	45
New York University College of Medicine, 477 First Ave., New York 16	Arthritis and Allied Rheumatic Disorders	March 18-22, 1946 5 days, full time	45
	Arthritis and Rheumatic Disorders	6 weeks, arranged	100
At Bellevue Hospital	Arthritis	Not determined	Members 20
American College of Physicians 4900 Pine St Philadelphia 4	Arthritis		Non Members 40
At Location not determined			Physicians in service free
BACTERIOLOGY			
Wayne University College of Medicine, 1016 St Antoine St., Detroit 1	Immunology and Virology	Jan through March 1946	10
Columbia University—At New York Post Graduate Medical School, 305 East 20th St., New York 3	Clinical Bacteriology and Serology	Jan 2 Jan 31, 1946, 1 month part time	100
Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N C	Specialty Training in Pathology and Bacteriology	9 months minimum	Not stated
Duke University School of Medicine, Durham, N C	Bacteriology and Parasitology	3 months or longer, arranged	None
University of North Carolina School of Medicine, Chapel Hill, N C	Bacteriology and Immunology	Arranged	Approximately 20
BIOCHEMISTRY			
Crichton University School of Medicine, 506 N 14th St., Omaha	5 Lectures on Recent Developments in Biochemistry	Arranged	G I Bill of Rights and free
Duke University School of Medicine, Durham, N C	Biochemistry	3 months or longer, arranged	None
University of North Carolina School of Medicine, Chapel Hill, N C	Biochemistry	Arranged	Approximately 2
CARDIOVASCULAR DISEASES (See also Electrocardiography)			
College of Medical Surgeons, 312 Bove Ave., Los Angeles	Cardiology	March 4, 1946, 12 weeks, once weekly	24
University of Georgia School of Medicine, University Place, Augusta, Ga	Cardiology	2 weeks, arranged	150
Lufts Medical School, Postgraduate Division 30 Bennet St., Boston 11	Cardiology	April 20 May 3, 1946, 1 week	Registration 1 Tuition 2
At I H Pratt Diagnostic Hospital			
University of Michigan Medical School, Department of Post Graduate Medicine, 723 East Ann St., Ann Arbor, Mich	Diseases of the Heart	Spring 1946, 2 days	7
At University of Michigan Hospital	Diseases of the Blood and Blood Forming Organs	Spring 1946, 5 days	2
Crichton University School of Medicine, 506 N 14th St., Omaha	Cardiovascular Renal Diseases	Arranged	G I Bill of Rights and free
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave. Brooklyn 2	Peripheral Vascular Diseases	April 9, 1946, 8 weeks	20
At Beth Zion Hospital	Clinical Cardiology	April 10, 1946, 10 sessions	20
At Jewish Hospital	Bedside Clinical Cardiology	15 sessions April 9, 1946	20
At Kings County Hospital	Hypertension and Nephritis	April 17, 1946, 5 weeks	20
	Heart Diseases in Childhood	April 12, 1946, 10 sessions	20
Columbia University Faculty of Medicine, 60 West 16th St., New York 7	Elementary Clinical Cardiology	March 14-June 4, 1946, 12 weeks, part time	70
At Montefiore Hospital	Supplementary Clinical Cardiology	Jan 5 March 19, 1946, 2 months, part time	0
At Mount Sinai Hospital	Advanced Clinical Cardiology	Jan 5 June 4, 1946, 5 months, part time	100
New York Polyclinic Medical School and Hospital, 345 W 50th St., New York 19	Comprehensive Course in the Elements of Cardiovascular Diseases	April 1 June 19, 1946	7
New York Medical College Flower and 115th Avenue Hospital, East 16th St., New York	Diagnosis and Treatment of Diseases of the Heart	20 hours, arranged	14
New York University College of Medicine, 477 First Ave., New York 16	Cardiovascular Diseases	Spring 1946, 6 months part time	Veterans 6 Civilians 7
At Beth Israel Hospital			
American College of Physicians 4900 Pine St., Philadelphia 4	Cardiology	Not determined	Members 20 Non Members 40 Physicians in service free
At Location not determined			
Werner's Medical College of Philadelphia, Henry Avenue and Alcott-for-I Road, Philadelphia 22	Clinical Cardiology	2 weeks, arranged	100
Military Medical College, 100 14th Avenue North at Jefferson St., Nashville, Tenn	The Diagnosis and Treatment of Complications of Cardiovascular Disease	2 weeks Jan 1946	

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
CHEMISTRY			
Duke University School of Medicine, Durham, N. C.	Seminars in Clinical Chemistry	10 to 12 weekly seminars, arranged	None
	Practical and Theoretical Instruction in Clinical Chemistry	3 months, arranged	None
CHEST DISEASES			
(See also Anatomy, Medicine and Radiology)			
California Tuberculosis Association, 45 2d St., San Francisco At: University of California and Stanford University Hospitals	Postgraduate Instruction in Diseases of the Chest	Arranged	None
State Sanatorium, Sanatorium, Miss.	Chest Diseases and Internal Medicine	2 to 6 weeks, entire year	None
Creighton University School of Medicine, 306 N. 14th St., Omaha	Diseases of the Chest	Arranged	G. I. Bill of Rights and free 45
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Acute and Chronic Diseases of the Chest	Jan. 3-Feb. 23, 1946, 2 months, part time	45
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York At: Metropolitan Hospital Division	Acute and Chronic Pulmonary Diseases	May 20-24, 1946, 5 days, full time	150
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined	Diseases of the Respiratory System	1 month, arranged	Not determined
Woman's Medical College of Pennsylvania, Henry Avenue and Abbottsford Road, Philadelphia 29	Chest Diseases	Beginning Oct. 1945, weekly lectures, arranged	Members 20 Non-Members 40 Physicians in service free per lecture 3
DERMATOLOGY AND SYPHILOLOGY			
(See also Medicine)			
College of Medical Evangelists, 312 Boyle Ave., Los Angeles At: White Memorial Hospital	Dermatology	Feb. 4, 1946, 10 periods, once weekly	20
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Lecture and Clinical Course in Dermatology	April 8, May 20, June 17, 2 weeks	100
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Boston City Hospital	Dermatology B	April 1-5, 1946, 1 week	Registration 5 Tuition 25
Wayne University College of Medicine, 1518 St. Antoine St., Detroit 1 At: Receiving Hospital	Clinic and Conference in Dermatology and Syphilology	Arranged, part time, 10 weeks	20
Creighton University School of Medicine, 306 N. 14th St., Omaha	Inflammatory Diseases of the Skin	Arranged, part time	25
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Dermatology	Arranged	G. I. Bill of Rights and free 25
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Veneral Diseases, Syphilis, Gonorrhea, Lymphogranuloma Venereum, Chancroid and Granuloma Inguinale	Feb. 7-March 23, 1946, 8 weeks	6 weeks 30 3 months 50 6 weeks 60 3 months 65
	Diagnosis and Treatment of Syphilis	Arranged, 6 weeks or 3 months	100
	Clinical Dermatology and Syphilology	Arranged, 6 weeks or 3 months	90
	Dermatology and Syphilology for Pediatricians	Feb. 6-April 21, 1946, part time	75
	Symposium on Dermatology and Syphilology	May 13-18, 1946	75
	Symposium on Industrial Dermatology	June 17-21, 1946	60
	Dermatology and Syphilology	1 month, May 1-31, 1946	60
	Dermatology and Syphilology	April 20-May 4, 1946	60
	Dermatology and Syphilology	6 weeks, 1st of any month part time	Half fee to physicians in service 100
	Syphilology	6 weeks, arranged 3 months, part time, 1st of any month	Half fee to physicians in service 100
DIABETES			
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: New England Deaconess Hospital	Diabetes Mellitus in Relation to General Medicine	April 1-3, 1946	20
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: J. H. Pratt Diagnostic Hospital and Boston Dispensary	Diabetes	Jan. 14-19, 1946, 1 week	Registration 5 Tuition 25
Creighton University School of Medicine, 306 N. 14th St., Omaha	Diabetes	Arranged	G. I. Bill of Rights and free
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Diabetes	April 18, 1946, 8 weeks, part time	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Recent Advances in Diabetes Mellitus and Hyperinsulinism	Feb. 4-9, 1946, 6 days	35
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Diabetes Mellitus, Nephritis and Hypertension	Jan. 3-Feb. 23, 1946, 2 months, part time	45
	Diabetes Mellitus, Nephritis and Hypertension	April 8-12, 1946, 5 days, full time	45
ELECTROCARDIOGRAPHY			
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12 Michael Reese Hospital, 29th St., and Ellis Ave., Chicago 16	Electrocardiography and Heart Disease	1 month, 1st of each month, Feb.-June	175
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: J. H. Pratt Diagnostic Hospital	Electrocardiographic Interpretation	Feb. 13-May 2, 1946	25
	Electrocardiography	May 13-17, 1946, 1 week	Registration 5 Tuition 25
	Advanced Electrocardiography	Jan. 21-23, 1946, 3 days	As above

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ELECTROCARDIOGRAPHY—Continued			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Receiving Hospital	Electrocardiography	Jan. through March 1946, part time	\$ 10
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Electrocardiography Electrocardiography and Clinical Cardiology	April 15, 1946, 5 weeks, part time April 9 1946, 5 weeks, part time	20 20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Montefiore Hospital	Elementary Electrocardiography Supplementary Electrocardiography Advanced Electrocardiography	March 21 June 6; June 6 Aug. 15, 1946 Jan. 3 March 14, 1946	35 35 35
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 4	Electrocardiography	June 6, 1946	50
New York Polytechnic Medical School and Hospital, 345 W. 50th St., New York 19	Electrocardiographic Interpretation	June 3 7, 1946, 5 days, full time	75
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 103th St., New York	Electrocardiography	2 weeks, part time, arranged	150
New York University College of Medicine, 477 First Ave., New York 10 At: Beth Israel Hospital	Electrocardiography	15 hours, arranged	35
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Electrocardiography	Spring 1946, 10 weeks, part time May 20 24, 1946	50
ELECTROENCEPHALOGRAPHY			
University of Illinois College of Medicine, 1833 W. Polk St., Chicago	Electroencephalography	Arranged, 3 weeks	60
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 3	Clinical Electroencephalography	Jan. 14 19, 1946	60
University of Texas, 812 Avenue B, Galveston, Texas	Electroencephalography	Arranged	Arranged
ENDOCRINOLOGY			
Tufts Medical School Postgraduate Division, 20 Bennet St., Boston 11 At: J. H. Pratt Diagnostic Hospital	Endocrinology	May 20-24, 1946, 1 week	registration 5 tuition 25
University of Michigan Medical School, Department of Postgraduate Education, 1313 East Ann St., Ann Arbor, Mich.	Endocrinology and Metabolism	Spring 1946, 3 days	Not stated
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Carbohydrate Metabolism Endocrinology of Reproduction	Jan. thr. March 1946, part time Spring 1946, 1 quarter	5 10
Creighton University School of Medicine, 306 N. 14th St., Omaha	Endocrinology	Arranged	G. I. Bill of Rights and free 20
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital At: Long Island College Hospital	Female Sex Endocrinology Endocrine Diseases and Disorders in Children and Adolescents	April 16, 1946, part time April 15, 1946	20 20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 103th St., New York	Endocrinology	2 weeks, arranged	100
New York University College of Medicine, 177 First Ave., New York 10 At: Bellevue Hospital	Diseases of Metabolism	Feb. and March 1946, 2 months, part time	75
ENDOSCOPY			
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Practical Cystoscopy	2 weeks, every 2 weeks	150
FRACTURES			
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Kings County Hospital	Fractures	April 5, 1946, 10 sessions	20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 103th St., New York	Fractures and Allied Trauma	Arranged	with group 150
GASTROENTEROLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles	Gastroenterology	Feb. 4, 1946, 12 periods	24
At: White Memorial Hospital			
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Personal Course in Gastroscopy and Gastroenterology	April 22, June 3, 1946	200
University of Michigan Medical School, 1313 East Ann St., Ann Arbor, Mich.	Gastroenterology	Spring 1946, 5 days	25
At: University of Michigan Hospital			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Receiving Hospital	Gastroenterology Clinic	Spring 1946, 3 months	Pract. Physicians 5 Residents 2
Creighton University School of Medicine, 306 N. 14th St., Omaha	Gastroenterology	Arranged	G. I. Bill of Rights and free 20
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Greenpoint Hospital	Gastroenterology	April 16, 1946, 6 weeks, part time	
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 3	Gastroenterology	Jan. 2 Feb. 27, 1946, 2 months, part time	45
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Columbia Presbyterian Medical Center At: Montefiore Hospital	Gastroenterology Gastroscopy	March 25 April 5, 1946, 10 days, full time Arranged, 2 months, part time	75 250
At: Mount Sinai Hospital	Clinical Gastroenterology Comprehensive Gastroenterology	Feb. 7 April 11, 1946, 2 months, part time April 1 June 10, 1946, 12 weeks	35 75
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 103th St., New York	Peritoneoscopy Gastroenterology	Arranged 1 month, arranged	100 100
New York Polytechnic Medical School and Hospital, 345 W. 50th St., New York 19	Proctology and Gastroenterology (Clinical) also Cadaver Proctology Gastroenterology	1 month, arranged April 1, 1946 6 weeks part time, Jan. 2, April 1, 1946	100 Half fee to physicians in service 50 Half fee to physicians in service

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
GASTROENTEROLOGY—Continued			
New York University College of Medicine, 177 First Ave., New York 16	Clinical Gastroenterology	Spring 1946, 5 months, part time	\$100
At: Bellevue Hospital			
At: Beth Israel Hospital	Gastroenterology	Jan. 1 to Feb. 23, 1946, 8 weeks part time	50
At: Lenox Hill Hospital	Gastroenterology	Jan. 1946, 7 weeks, part time	50
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Gastro-Intestinal Disease	5 days full time, Feb. 23-March 1, 1946	50
American College of Physicians, 4200 Pine St., Philadelphia 1	Gastroenterology	Not determined	Members 20 Non-Members 40 Physicians in service free
At: Location not determined			
HEMATOLOGY (See also Pathology)			
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11	Hematology O	Announced for 1946	75
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Hematology Clinic	Spring 1946	Pract. Physicians 5 Residents 2
At: Receiving Hospital			
Creighton University School of Medicine, 806 N. 14th St., Omaha	Hematology	Arranged	G. I. Bill of Rights and free 20
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Clinical Hematology	April 18, 1946, 5 weeks, part time	
At: Jewish Hospital			
Columbia University Faculty of Medicine, 630 West 168th St., New York 32	Clinical Hematology (Advanced Course)	Feb. 1-March 28, 1946, 8 weeks	50
At: Mount Sinai Hospital			
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Hematology	1 month, arranged	100
New York University College of Medicine, 477 First Ave., New York 16	Hematology	Jan. 1946, 6 weeks, part time	25
At: Lenox Hill Hospital			
American College of Physicians, 4200 Pine St., Philadelphia 4	Hematology	Not determined	Members 20 Non-Members 40 Physicians in service free
At: Location not determined			
INDUSTRIAL HEALTH			
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	1st Postgraduate Course in Industrial Medicine	Jan. 14-Feb. 1, 1946	75 per week 25
Occupational Health, 1072 Penobscot St., New York 3	Occupational Health and Medicine	Jan. 7, 2 weeks, full time	Not stated
New York Post-Graduate Medical School of Medicine, 912 Avenue B., Galveston, Texas	Symposium on Industrial Medicine	June 17-21, 1946, 5 days, full time	15
	Industrial Medicine	March 1946, tentative	Not stated
LEGAL MEDICINE			
New York University College of Medicine, 177 First Ave., New York 16	Courses in Forensic Medicine	Variable, Oct. thru June	variable
Duke University School of Medicine, Durham, N. C.	Legal Medicine	3 months or longer, arranged	None
MEDICINE, GENERAL			
(See also Chest Diseases, Electrocardiography, Gastroenterology, Obstetrics and Gynecology, Neurology and Psychiatry and Surgery)			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 1	General Medicine	Feb. 5, 1946, 12 periods	21
At: White Memorial Hospital	Varicose Veins	April 4, 1946, 6 hours	12
University of California Medical School, Medical Center, San Francisco 22	General Medical Course	12 weeks beginning June 1, 1946	200
Research Study Club of Los Angeles, Inc., 727 W. 7th St., Los Angeles	15th Annual Midwinter PG Clinical Course	2 weeks, Jan. 20-Feb. 5, 1946	Free to physicians in service
California Medical Association, 450 Sutter St., San Francisco 5	Regular P. G. Program	Throughout year	None
At various cities.			
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course, Internal Medicine	4 to 6 weeks, Feb. 11-March 9 or 23, 1946	\$150 to 225
	Intensive General Review Course	9 weeks, Feb. 11-April 13, 1946	G. I. Bill of Rights 225
Emory University School of Medicine, 50 Armstrong St., Atlanta, Ga.	Intensive Refresher Course in Infectious Diseases	2 weeks, March 11-23, 1946	G. I. Bill of Rights 75
University of Georgia School of Medicine, University Place, Augusta, Ga.	General Internal Medicine	12 weeks, Jan. 13-April 6, 1946	G. I. Bill of Rights 250
At: University Hospital			
Cook County Graduate School of Medicine, 127 South Honore Street, Chicago 12	General Medicine and Surgery	1 week, June 1946	None
	Postgraduate Course for Negro Physicians	1 week, last half of June 1946	None
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Internal Medicine	2 weeks, Feb. 18, April 8, May 13, June 17, 1946	75
	Refresher Course for Ex-Military Personnel	3 months, every 3 months	residents 75 nonresidents 100
Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis 7	Refresher Course for General Practice	Arranged, 3 months	Ill. physicians 75 nonresidents 100
At: University and City Hospitals	Extern work	3 to 6 months, tentative	not stated
State University of Iowa, College of Medicine, University Campus, Iowa City	General Review of General Medicine	Arranged, tentative	not stated
At: University Hospitals	General Medicine	Jan. 14-April 6, 1946	100
	Operation of Blood Transfusion Service	Feb. 1-March 2, 1946, 1 month	50
Tulane University School of Medicine, 1480 Tulane Ave., New Orleans 15	Informal Refresher Courses	Arranged	None
Maine Medical Association, 177C Main St., Waterville, Maine	General Refresher Course	March 18-May 25, 1946	per week 25
At: Boston	Refresher Course	1 week or more	Arranged
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11	Clinical Medicine	Continuously, 1 weeks	registration 5 tuition 25
	Internal Medicine	May 6-31, 1946	registration 5 tuition 50
University of Michigan Medical School, 1315 Ann St., Ann Arbor, Mich.	Therapeutic Course	Spring 1946	None
At: 9 centers in Michigan		Spring 1946, 3 days	15
		Spring 1946, 3 days	per month 50
		Jan. and Feb. 1946, 2 months	per month 50
		Arranged	per month 50
		May-June 1946	per month 50
		March-April 1946	per month 50
	Internal Medicine		

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Physical Medicine	Arranged, part time	\$10
At: Eloise Hospital	Seminar in Medicine	1 quarter, arranged	5
	Diagnostic Conference	1 quarter, arranged	Not stated
	Diagnostic Conference	1 quarter, arranged	Not stated
	Medical Pathological Conference	1 quarter, arranged	Pract. Physicians 5 Residents 2
At: Receiving Hospital	Therapeutic Conference	1 quarter, arranged	As above
	Ward Rounds and Conferences	10 weeks, arranged, part time	5
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Course in Medicine	Jan. 7-March 30, 1946, 3 months	150
State Sanatorium, Sanatorium, Miss.	Continuation Course in Basic Sciences	April 8-June 29, 1946, 3 months	150
	Chest Diseases and Internal Medicine	2 to 6 weeks, throughout year	None
	Special Courses	Individually arranged	G. I. Bill of Rights and free
	Clinical Basic Science Conference	Arranged	G. I. Bill of Rights and free
Creighton University School of Medicine, 306 N. 14th St., Omaha	Preceptorship	Individually arranged	G. I. Bill of Rights and free
	General Medicine	Arranged	G. I. Bill of Rights and free
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Sterility	April 9, 1946, 12 sessions	20
At: Greenpoint Hospital	Gynecological Pathology	April 2, 1946, 12 sessions	50
At: Israel Zion Hospital	Bedside Clinics in Diseases of Liver and Gallbladder	Feb. 6-March 27, 1946	35
Columbia University Faculty of Medicine, 630 West 165th St., New York 32	Geriatrics, Disease in the Aged	Feb. 7-March 28, 1946, 8 weeks	25
At: Mount Sinai Hospital	Cardiology	Jan. 7-Feb. 25, 1946, 2 months, part time	45
	Cardiology	May 13-17, 1946, 5 days, full time	45
	Cardiology	April 15-May 10, 1946, 4 weeks, full time	125
	Combined Course in Internal Medicine	March 4-May 24, 1946, 12 weeks, full time	250
	Diseases of the Thyroid and Other Endocrine Glands and Nutrition	Jan. 4-Feb. 15, 1946, 2 months, part time	45
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Diseases of the Liver and Biliary Tract	Jan. 2-Feb. 27, 1946, 2 months, part time	30
	Peripheral Vascular Diseases	May 13-17, 1946, 5 days, full time	45
	Peripheral Vascular Diseases	Jan. 8-Feb. 26, 1946, 2 months, part time	30
	Problems in Diagnosis	Jan. 7-Feb. 25, 1946, 2 months, part time	45
	Psychological Aspects of Internal Medicine	Jan. 4-Feb. 15, 1946, 2 months, part time	25
	Seminar in Internal Medicine	Jan. 2, 1946, 2 months	1 month 125 2 months 225
	Symposium on Internal Medicine	June 17-28, 1946, 10 days, full time	10 days 75 5 days 45
	Diseases of the Liver and Biliary System	1 month, arranged	100
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Peripheral Vascular Diseases	2 weeks, arranged	150
At: Metropolitan Hospital Division	Physical Diagnosis	1 month, arranged	150
	Internal Medicine	1 month, arranged	150
	Blood Transfusions	Arranged	Not stated
	General Course in Physical Medicine	4 weeks, part time, arranged	100
New York Polytechnic Medical School and Hospital, 315 W. 50th St., New York 19	Course for General Practitioners	6 weeks, arranged	Half fee for physicians in service 100 Half fee to physicians in service 200
	Course for General Practitioners	3 months, arranged	Half fee to physicians in service 100 Half fee to physicians in service 200
New York University College of Medicine, 471 First Ave., New York 16	General Review for General Practitioners	3 months, arranged	Half fee to physicians in service 100 Half fee to physicians in service 200
At: Bellevue Hospital	Genito Infectious Diseases	Arranged, 1 week	Veterans 175 Civilians 225
	Internal Medicine	1st of each month, 1 month	Veterans 15 Civilians 25
Rowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.	Specialty Training in Medicine	9 months minimum	50
	Refresher Courses (2)	6 weeks	Not stated
Duke University School of Medicine, Durham, N. C.	Refresher Courses (6)	3 months minimum	Not stated
At: Duke Hospital	Medicine	3 months or longer, arranged	None
	General Medicine	1 or 2 weeks or longer, arranged	None
Ohio State University, College of Medicine, 11th and Neil Aves., Columbus 10	Postgraduate Continuation Studies	Arranged, 2 weeks to 3 months	per week 15
Western Reserve University School of Medicine, 2109 Adelbert Road, Cleveland 6	Refresher Course for Physicians	3 months, arranged	150
At: University Hospitals			
University of Oregon Medical School and Hospital, Marquam Hill, Portland 1	General Refresher Course	Individually arranged	per month 75
American College of Physicians, 4200 Pine St., Philadelphia 4	General Informal Review	Individually arranged	per month 75
At: Location not determined	General Medicine	Not determined	Members 20 Non-Members 40
	Internal Medicine	Not determined	Physicians in service free As above 175
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Refresher Course	12 weeks, arranged	175
University of Pittsburgh School of Medicine, Biscow Blvd., Pittsburgh	Refresher Course for General Practitioners	8 weeks, arranged	150
University of Tennessee College of Medicine, 874 Union Ave., Memphis, Tenn.	Refresher Course in Medicine	1 quarter—11 weeks, beginning Dec. 31, 1945	120
Baylor University College of Medicine, 509 Lincoln Ave., Houston, Texas	Refresher Course in General Medicine	Jan. 7-April 13, 1946, 14 weeks	150
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	General Internal Medicine	Spring 1946, 3 days	125
Southwestern Medical College, 2211 Oak Lawn, Dallas, Texas	Medicine	2 months, arranged	75
University of Vermont College of Medicine, Pearl St., College Park, Burlington, Vt.	General Practice, Internal Medicine	1 to 9 months, beginning of each month	per year 500 pro rated
Medical College of Virginia, 12th and Marshall Sts., Richmond, Va.	Refresher	2 weeks, March 1946	Not stated
	St. Philip Hospital Postgrad. Clinic	1 week, June 1946	Ya. residents 5 non-Ya. residents 10

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
University of Virginia Department of Medicine, University Station, Charlottesville, Va.	Refresher Course in Internal Medicine	2 weeks, June 1946	\$ 40
University of Wisconsin Medical School, 118 North Randall Ave., Madison 6, Wis.	Postgraduate Course Various Subjects	12 weeks, arranged	125
	Course for Specialists in Internal Medicine	2 to 6 months, arranged	per month 100
	Observation Course in Medical and Surgical Subjects	1 to 5 months, arranged	per month 100
	Observation Course in Medical and Clinical Subjects	1 to 5 months, arranged	per month 100
At: Wisconsin General Hospital, Madison	Internal Medicine	3 months, arranged	150
Marquette University School of Medicine, 561 N. 15th St., Milwaukee			
NEUROLOGY AND PSYCHIATRY (See also Medicine and Ophthalmology)			
College of Medical Surgeons, 312 N. Boyle Ave., Los Angeles	Medical Psychology	April 4, 1946, 10 periods, once weekly	15
At: Los Angeles County Medical Association Building	Functional Neurology	March 6, 1946, 10 periods, once weekly	25
At: White Memorial Hospital	Neuropsychiatry	3 months, Jan., Feb., March 1946	200
University of California, Extension Division, San Francisco	Case Seminar in Psychotherapy	Oct. 1945 thr. June 1946 2 hours a week	per semester 150 per semester hr. 10
At: Langley Porter Clinic	Individual Clinical Conferences	Oct. 1945 thr. June 1946 2 hours a week	As above
Catholic University of America, Washington, D. C.	Individual Conferences and Consultations on Literature and Technique	Oct. 1945 thr. June 1946 2 hours a week	As above
	Psychopathology	Oct. 1945 thr. June 1946 1 hour per week	Not stated
	Seminar in Clinical Psychology and Psychotherapy	1 year, 2 hours weekly	As above
	Child Psychiatry	4 months, 2 hours a week	As above
At: St. Elizabeths Hospital	Neurology and Neuropathology	Oct. 1945 thr. June 1946	per semester hr. 10
	Electric Shock Therapy	Oct. 1945 thr. June 1946	per semester hr. 10
	Clinical Psychiatry	Oct. 1945 thr. June 1946 2 hours a week	As above
	Introduction to Psychiatry	Oct. 1945 thr. June 1946 2 hours a week	per semester 150 per semester hr. 10
St. Elizabeths Hospital, Washington, D. C.	Psychiatry, Psychosomatic Medicine, Neuroanatomy, Neuropathology	3 to 4 months	Not stated
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course	3 weeks, Feb. 25-March 16, 1946	125
Institute for Psychoanalysis, 43 East Ohio St., Chicago	Psychiatry and Neurology	Winter and Spring, quarters	None
Metropolitan State Hospital, Waltham, Mass.	Psychosomatic Case Demonstrations		
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	11th PG Seminar in Neurology and Psychiatry	Jan. 7-April 22, 1946, once weekly	Not stated
At: Receiving Hospital	Problems in Neurology	1 quarter, arranged	10
Creighton University School of Medicine, 200 N. 11th St., Omaha	Ward Rounds and Conferences	Arranged, 10 weeks, part time	5
American Institute for Psychoanalysis, 210 Central Park South, New York 21	A Psychosomatic Case Conference	Arranged	G. I. Bill of Rights and free
	Pioneers of Psychoanalytic Thinking	15 weeks, beginning Feb. 5, 1946	15
	Psychoanalytic Technique	5 weeks, beginning Feb. 7, 1946	7 50
	Introductory Lectures	15 weeks, beginning Feb. 1, 1946	25
American Orthopsychiatric Association, 119 East 73d St., New York	Seminar on Personal Case Histories	10 weeks, beginning Feb. 5, 1946	12 50
	Continuous Case Seminar	5 weeks, beginning Feb. 6, 1946	7 50
	Child Psychiatry	10 weeks, beginning April 18, 1946	12 50
	Psychoanalytic Technique		
At: Hotel New Yorker	Advanced Lectures		300
Columbia University Faculty of Medicine, 630 West 165th St., New York 22	Annual Scientific Meeting	Feb. 11-16, 1946	
At: Mount Sinai Hospital	Recent Advances in Neurology and Psychiatry	March 4-8, 1946, 5 days	30
Columbia University—At: New York Post-Graduate Medical School, 203 East 20th St., New York 3	Psychological Aspects of Internal Medicine	Jan. 4-Feb. 15, 1946, 2 months, part time	25
	Psychoanalysis in General Medicine	Jan. 2-March 27, 1946, 13 sessions, part time	50
	Neurological and Psychiatric Diagnosis in General Practice	April 20-May 10, 1946	75
	Neurology and Psychiatry in Pediatrics	March 11-23, 1946, 2 weeks	75
New York Polytechnic Medical School and Hospital, 345 W. 50th St., New York 19	Neuropsychiatry	Arranged	Not stated
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Neuro surgery	Arranged	Not stated
	Continuous Case Seminar	15 sessions, arranged	30
	Introduction to Psychoanalytic Techniques	15 sessions, arranged	10
	Child Psychiatry	12 sessions, Spring, once weekly	25
New York Psychoanalytic Institute, 245 East 82d St., New York 28	Technique of Psychoanalysis	10 lectures, arranged	20
	Seminar on Dream Interpretation	12 sessions, arranged	25
	Introduction to the Rorschach Technique of Personality	10 lectures, once weekly, beginning Feb. 6, 1946	25
	Neurology	15 sessions, arranged	30
New York Psychoanalytic Institute, 245 East 82d St., New York 28	Psychiatry	15 sessions, arranged	30
	Seminar in Psychoanalytic Medicine	12 sessions, arranged	25
	Introduction to Psychoanalysis	10 lectures, arranged	20
	Neurology	1 month, full time, arranged	30
New York Psychoanalytic Institute, 245 East 82d St., New York 28	Clinical Conference	15 sessions, arranged	25
	Relationship Between Psychoanalysis and Medical Practice	12 sessions, March 22-June 14, 1946	plus \$2 registration fee
	Clinical Conferences	12 sessions, March 22-June 14, 1946	As above
	General Pathology of the Neuroses	12 sessions, March 22-June 14, 1946	As above

Postgraduate Continuation Courses for Practicing Physicians—Jan 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
NEUROLOGY AND PSYCHIATRY—Continued			
New York University College of Medicine, 477 First Ave., New York 16	Neurology	3 months to 1 year	\$200 to 600
At Bellevue Hospital	Neuropsychiatry	3 months to 1 year	As above
Duke University School of Medicine, Durham, N C	Neuropsychiatry	3 months or longer, arranged	None
American College of Physicians 4200 Pine St., Philadelphia 4	Psychiatry and Neurology	Not determined	Members 20 Non Members 40 Physicians in service free
Philadelphia Psychoanalytic Institute, 206 South 13th St., Philadelphia 7	Clinical Conference II (Advanced) Colloquium III Clinical Problems and Technique	Feb 25 May 20, 1946 7 sessions Feb 18 April 4, 1946, 3 sessions	9 8
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Technical Procedures of the Neurological Examination Industrial Psychiatry Electro Shock Therapy	Arranged 3 days March 7, 8 and 9, 1946 Arranged	Arranged Arranged
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis	Course in Neuropsychiatry for Specialists	2 to 6 months, arranged	per month 100
NEUROSURGERY			
Duke University School of Medicine, Durham, N C	Neurosurgery	3 months or longer, arranged	None
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis	Neurosurgery for Specialists	2 to 6 months, arranged	per month 100
NUTRITION (See also Medicine)			
Wayne University College of Medicine, 1516 St Antoine St., Detroit 1	Nutrition	Jan through March 1946, 3 hours per week	10
Creighton University School of Medicine, 306 N 14th St., Omaha	5 Lectures on Nutrition Fundamentals	Arranged	G I Bill of Rights
Duke University School of Medicine, Durham, N C	Nutrition	3 months or longer, arranged	None
University of North Carolina School of Medicine, Chapel Hill, N C	Nutrition	Arranged	Approximately 25
OBSTETRICS AND GYNÆCOLOGY (See also Medicine, Pathology and Surgery)			
Alabama State Health Department At Slossfield Health Center, Birmingham, Ala	Obstetrics	Jan 14 16, 1946	15
George Washington University School of Medicine, 1335 H St N W., Washington 5, D C At Gallinger Municipal Hospital	Intensive Refresher Course in Obstetrics and Gynecology	March 18 April 6, 1946	125
University of Illinois College of Medicine, 1833 W Polk St., Chicago	Obstetrics and Gynecology	Continuously, 2 weeks	10 Ill Phys Free
University of Illinois College of Medicine, 1833 West Polk St., Chicago	Refresher Course in Obstetrics	1 week, arranged	None
University of Chicago School of Medicine, 58th and Ellis Ave., Chicago At Chicago Lying In Hospital	Refresher Course for Veterans	4 weeks April 1, 1946 tentative date	Not determined
Chicago Maternity Center, 1336 South Newberry Ave., Chicago	Assistant Residency in Obstetrics	4 to 6 months, continuously	None
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Obstetrics Operative and Office Gynecology	2 weeks, Feb 11, March 11, April 8, May 6, June 3, 1946 2 weeks, Feb 23 March 25 April 29, May 20, June 17, 1946	100 150
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 13	Obstetrics and Gynecology	5 days, Jan 14 18, 1946	25
Louisiana State University School of Medicine, 1542 Tulane Ave., New Orleans 13	Refresher Course in Obstetrics	2 weeks, full time, quarterly	None
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At Boston Lying in Hospital	Clinical Obstetrics	Arranged, 1 month or longer	125
Wayne University College of Medicine, 1516 St Antoine St., Detroit 1	Gynecologic Pathology	April through June 1946 4 hours per week	25
University of Nebraska College of Medicine, 42d St and Dewey Ave., Omaha	Intramural Ob-Ped Training, Postgraduate	12 weeks, arranged	None
Creighton University School of Medicine, 306 N 14th St., Omaha	Obstetrics and Gynecology	Arranged	G I Bill of Rights and free full time
Duke University School of Medicine, Durham, N C	Obstetrics and Gynecology	3 months or longer, arranged	None
New York Polyclinic Medical School and Hospital, 345 W 50th St., New York 19	Clinical and Operative Gynecology (Cadaver)	6 weeks arranged	175
New York University College of Medicine, 477 First Ave., New York 16 At Beth Israel Hospital	Gynecology	Spring 1946, 16 weeks, part time	250
Long Island College of Medicine Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At Long Island College Hospital At Cumberland Hospital	Manikin Prenatal Care Complications of Pregnancy Gynecological Endocrinology Symposium on Recent Advances in Gynecology Seminar in Gynecology	April 16, 1946, 12 sessions, part time April 18, 1946 8 sessions, part time April 2, 1946, 8 sessions, part time Jan " March 5, May 7, 1946, 24 sessions, part time June 1946 to be announced, 6 days Jan 2, 1946, 3 months	20 20 20 100 50
Columbia University—At New York Post Graduate Medical School, 203 East 20th St., New York 3	Seminar in Gynecology Cystoscopy and Endoscopy Surgical Anatomy as Applied to Operative Gynecology (Cadaver)	April 1, 1946 2 months Arrange 1, 15 weeks, part time Arranged, 12 sessions	2 months 225 3 months 00 225 75 250
Columbia University Faculty of Medicine, 630 West 16th St., New York 23 At Margaret Hague Maternity Hospital	Practical Course in Obstetrics	1st of any month, 3 months	250
Rowman Gray School of Medicine of Wake Forest College, Winston-Salem, N C	Observation Course in Obstetrics Specialty Training in Obstetrics and Gynecology	1st of any month 1 month 9 months minimum	100 Not stated
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Obstetrics	5 days, full time, Jan 14 15, 1946	50

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OBSTETRICS AND GYNECOLOGY—Continued			
Woman's Medical College of Pennsylvania, Henry Avenue and Abbottsford Road, Philadelphia 29	Practical Obstetrics	Arranged	Arranged
Tennessee State Medical Association At: Various centers	Gynecology	10 weeks each, Jan. 1946 Jan 1947	Whites 10 Negroes 3 50 Interns 2 50 100
School of Medicine, University of Tennessee, 674 Union Ave., Memphis, Tenn.	Graduate Medical Course in Caudal Analgesia	Beginning Dec. 30, 1945	
Southwestern Medical College, 2211 Oak Lawn, Dallas, Texas	Obstetrics and Gynecology	2 months, arranged	75
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Obstetrics	1 week, full time, March 11 16, 1946	25
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Obstetrics and Gynecology for Specialists	2 to 6 months, arranged	per month 100
OPHTHALMOLOGY			
(See also Medicine and Otorhinolaryngology)			
George Washington University School of Medicine, 1335 H St N.W., Washington 5, D. C.	Course for Orthoptic Technicians 8th Annual PG Course in Ocular Surgery, Pathology and Orthoptics	6 months, Jan. 7 July 1, 1946; April 2 Sept 15, 1946 1 week, Feb. 4 9, 1946	Not stated Not stated
The Children's Memorial Hospital, 707 Fullerton Ave., Chicago	Postgraduate Conference in Neuromuscular Anomalies of the Eyes	May 12 17	50
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Clinical Ophthalmology	2 weeks every 2 weeks	50
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: Boston City Hospital	Ophthalmology	Monthly, part time	50
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Massachusetts Eye and Ear Infirmary	Fundamental Sciences in Ophthalmology Special Course in Clinical Ophthalmology Fundamentals of Refraction	March 4 April 27, 1946 April 29 May 25, 1946 May 27 June 22, 1946	200 100 60 25
University of Michigan, 1313 Ann St., Ann Arbor, Mich. At: University of Michigan Hospital	Ophthalmology and Otolaryngology	Spring 1946, 1 week	15
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Basic Ophthalmology	Arranged, 10 weeks, part time	
Creighton University School of Medicine, 306 N. 14th St., Omaha	Ophthalmology	Arranged	G. I. Bill of Rights and free
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Montefiore Hospital At: Mount Sinai Hospital	Ophthalmoscopy Advanced Ophthalmoscopy	Jan 15 March 15, 1946, 2 months, part time Arranged	35 25
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 3	Motor Anomalies of the Eye Anomalies of the Ocular Muscles Differential Diagnosis with the Slit Lamp Surgery of the Eye Ophthalmic Neurology	March 4 9, 1946, 6 days, full time March 11 15, 1946, 5 days Feb 25-March 1, 1946, 5 days part time March 18 23, 1946, 6 days, full time Feb 25-March 1, 1946, 5 days, part time	75 60 45 75 45
Columbia University— At: New York Eye and Ear Infirmary, 218 Second Ave., New York 3	Glaucoma Clinic Anatomy and Physiology Anatomy of the Temporal Bone External Eye Disease—Ocular Therapy Embryology Bacteriology, Serology and Immunology X Ray Slit Lamp Microscopy Refraction Plastic Eye Surgery Physiologic Optics Ophthalmoscopy Operative Eye Surgery Ocular Muscles Perimetry Neuro Ophthalmology Histopathology of the Eye	Arranged, 10 hours Arranged, 1 month Arranged, 1 month Arranged, 1 month, part time Arranged, 1 month Arranged, 1 month Arranged, 6 hours Arranged, 1 month, part time Arranged, 3 months, part time Arranged, 6 weeks, part time Arranged, 2 months, part time Arranged, 1 month, part time Arranged, 1 month, part time Arranged, 1 month, part time Arranged, 1 month, part time Arranged, 1 month, part time Arranged, 3 months, part time	40 40 45 40 40 25 50 100 75 75 40 75 40 40 30 65 75
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Otolaryngology (Clinical) Ophthalmology Ophthalmology (Also Cadaver and Refraction) Otolaryngology and Ophthalmology (Clinical) Otolaryngology and Ophthalmology (Also Cadaver) Refraction	6 weeks, Jan 2, 1946; April 1, 1946 6 weeks, part time, Jan 2, April 1, 1946 3 months, part time, Jan. 2, April 1, 1946 6 weeks, full time, Jan 2, April 1, 1946 3 months, full time, Jan. 2, April 1, 1946 6 weeks, part time, Jan. 2, April 1, 1946	Half fee to physicians in service 50 Half fee to physicians in service 275 Half fee to physicians in service 100 Half fee to physicians in service 600 Half fee to physicians in service 100 Half fee to physicians in service None
Duke University School of Medicine, Durham, N. C.	Ophthalmology	3 months or longer, arranged, full time	

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ORTHOPEDIC SURGERY (See also Anatomy)			
College of Medical Frangellists, 312 N. Boyle Ave., Los Angeles	General Orthopedic Surgery and Traumatology	Feb. 4, 1946, 12 weeks	\$ 20
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 3	Seminar in Orthopedic Surgery	Jan. 28 Feb. 28, 1946, 10 days, full time	90
	Orthopedics in General Practice	April 29 May 4, 1946	50
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Advanced Orthopedics of the Foot	8 periods, arranged	Not stated
	Operative Orthopedics (Cadaver)	5 periods, arranged	Not stated
	Orthopedic Surgery	3 months, arranged	Not stated
Duke University School of Medicine, Durham, N. C.	Orthopedic Surgery	3 months or longer, arranged full time	None
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Orthopedics	5 days, full time, April 8-12, 1946	50
OTOLOGY			
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 3	Surgical Anatomy as Applied to Otology	Arranged, part time	per hour 10
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Otology	Arranged, 1 month, part time	40
	Advanced Otology	Arranged	Not stated
	Motor Anomalies (Binocular Imbalance)	6 weeks, arranged	Not stated
	Ocular Muscles	Arranged	Not stated
	Plastic Reparative Surgery	4 weeks, Spring, arranged	Not stated
OTORHINOLARYNGOLOGY (See also Anatomy)			
College of Medical Frangellists, 312 N. Boyle Ave., Los Angeles	Otolaryngology	Jan. 8, 1946, 12 periods, part time	24
At: White Memorial Hospital			
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Clinical Otolaryngology	2 weeks, every 2 weeks	50
Illinois Masonic Hospital, 834 Wellington Ave., Chicago	Introduction to Rhinoplasty	Jan. 8-15, 1946, 1 week	150
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11	Otolaryngology	Monthly, part time	30 and 50
At: Boston Dispensary			
University of Illinois College of Medicine, 1833 W. Polk St., Chicago	Broncho Esophagology and Laryngeal Surgery	Spring 1946, 2 weeks	100
University of Illinois College of Medicine, 1833 W. Polk St., Chicago	Refresher Course of Otolaryngology for Specialists	Spring 1946, 1 week	50
	Refresher Course in Otolaryngology	Jan. 1946, tentative	Ill. Phys. 75 nonresidents 100
University of Michigan, 131 Ann St., Ann Arbor, Mich.	Ophthalmology and Otolaryngology	Spring 1946, 1 week	25
At: University of Michigan Hospitals			
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Course in Otolaryngology	Jan. 14-18, 1946, 5 days	25
Creighton University School of Medicine, 306 N. 14th St., Omaha	Otolaryngology	Arranged	G. I. Bill of Rights and free 150
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Head and Neck Dissection	6 weeks, arranged	
New York University College of Medicine, 477 First Ave., New York 16	Refresher Course on the Larynx for Specialists	Arranged, 4 months, part time	Arranged
At: St. Vincent's Hospital			
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 103th St., New York	Otolaryngologic Procedures	1 month, arranged	100
Columbia University Faculty of Medicine, 630 West 168th St., New York 32	Bronchoscopy	Arranged, 3 weeks	250
At: Columbia Presbyterian Medical Center			
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 3		to Arranged, part time	per hour 10
		Arranged, part time, Jan. 2-June 30, 1946	40 to 60
At: New York Eye and Ear Infirmary, 218 2d Ave., New York	Broncho Esophagology	Arranged	per hour 10
		Arranged, 12 days, intensive or 6 weeks	250
	Operative Ear Surgery	Arranged, 1 month	100
Duke University School of Medicine, Durham, N. C.	Otolaryngology	3 months or longer, arranged, full time	None
Gill Memorial Eye, Ear and Throat Hospital, 711 South Jefferson St., Roanoke, Va.	Annual Spring Graduate Course at the Hospital	1 week, 1st week in April, 1946	50
PATHOLOGY (See also Medicine, Obstetrics and Gynecology, Ophthalmology and Otorhinolaryngology)			
Indiana University School of Medicine, 1040 West Michigan St., Indianapolis 7	Course in Basic Sciences of Anatomy, Physiology and Pathology	6 months, tentative	not stated
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Pathology of the Heart	Arranged, 1 quarter	20
	Pathology of Neoplasms	Arranged, part time	20
	Pathology of Tuberculosis	Arranged, part time	20
	Clinical Pathology	Jan. through March 1946, part time	10
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Course in Pathology of Skin Diseases	Jan. 21-Feb. 20, 1946	50
Creighton University School of Medicine, 306 N. 14th St., Omaha	Surgical Pathology	1 or 2 weeks, arranged	G. I. Bill of Rights and free
At: St. Joseph's Hospital	Microscopical Pathology	2 weeks, arranged	As above
	Senior Pathological Conference	Arranged	As above
	Senior Clinicopathologic Conference	Arranged	As above
	Clinical Pathological Conference	Arranged	As above
Columbia University Faculty of Medicine, 630 West 168th St., New York 32	Surgical Pathology	Beginning in 1946, 15 weeks	Not stated
At: Mount Sinai Hospital			

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
PATHOLOGY—Continued			
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 3	Pathology of the Blood and Tissues	March 1-27, 1946	\$ 75
	Aspects of Gross and Microscopic Pathology	Jan 2 Feb. 27, 1946	30
	Surgical Pathology	April 22 May 31, 1946	75
	Gynecological Pathology	March 5 June 13, 1946	150
		Jan. 8 Feb. 4, 1946	75
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Pathology and Bacteriology	Arranged	Not stated
	Surgical Pathology	Arranged	Not stated
	Practical Laboratory Instruction in Pathology and Bacteriology	Arranged	Arranged
Bowman Gray School of Medicine of Wake Forest College, Winston Salem, N. C.	Specialty Training in Pathology and Bacteriology	1 months minimum	Not stated
Duke University School of Medicine, Durham, N. C.	Pathological Research	3 months or longer, full time, arranged	None
	Staff Appointments in Pathology	3 months or longer, full time, arranged	None
	Systematic Review of General and Surgical Pathology	3 months or longer, full time, arranged	None
	Gross and Microscopic Conferences on Surgical Pathology	3 months or longer, full time, arranged	None
	Pathology	3 months or longer, full time, arranged	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Pathology	Arranged	Approximately 25
American College of Physicians, 4200 Pine St., Philadelphia 4	Pathological Physiology of Diseases	Not determined	Members 20 Non Members 40 Physicians in service free
At: Location not determined			Arranged
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Surgical Pathology	Arranged	
PEDIATRICS			
(See also Allergy, Cardiovascular Diseases, Endocrinology, Neurology and Psychiatry, Obstetrics and Gynecology)			
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course in Pediatrics	4 weeks, March 4-30, 1946	150
Cook County Graduate School of Medicine, 427 South Honoré Street, Chicago 12	Formal Course in Pediatrics	2 weeks, given from April 8 June 3, 1946	G. I. Bill of Rights 75
	Clinical Course in Pediatrics	2 weeks or 1 month, every 2 weeks	2 weeks 60 1 month 100 None
	Refresher Course in Pediatrics	1 week, arranged	
University of Illinois College of Medicine, 1833 West Polk St., Chicago	Pediatrics	Jan 7 Feb. 1, 1946	registration 5 tuition 75
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11	Recent Advances in Care and Treatment of Children	Spring 1946, 3 days	15
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann St., Ann Arbor, Mich.	Clinical Review in Pediatrics	1 week, arranged	None
At: University of Michigan Hospital	Pediatrics	Arranged	G. I. Bill of Rights and free
University of Nebraska College of Medicine, 42d St. and Dewey Ave., Omaha	Symposium on Recent Advances in Pediatrics	March 25-30, June 17-22, 1946	50
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 3	Clinical Pediatrics	Jan 7 Feb. 2, April 1-27, 1946	125
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Clinical Pediatrics	Arranged, 10 sessions	20
	General Pediatrics, Including Diseases of the Newborn	Arranged, 3 months	Veterans 75 Civilians 100
	Pediatrics	4 weeks, part time, arranged	50
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Clinical Pediatrics	1 month, arranged	Hubb fee to physicians in service 150
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Pediatrics	3 months or longer, arranged, full time	None
Duke University School of Medicine, Durham, N. C.	Southern Pediatric Seminar	2 weeks, July 1946	25
Southern Pediatric Seminar, Saluda, N. C.	Intensive Course in Pediatrics	5 days, full time, Feb 4-8, 1946	50
University of Oregon Medical School, Marquam Hill, Portland 1	Pediatrics	2 months, arranged	75
Southwestern Medical College, 2211 Oak Lawn, Dallas, Texas	Spring Conference in Pediatrics	1 week, full time, April 1946	25
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Course in Pediatrics for Specialists	2 to 6 months, arranged	per month 100
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	PHARMACOLOGY		
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Survey of Pharmacology	Arranged, 10 weeks	Each course 10
	Principles of Therapeutics	Arranged, part time	5
Creighton University School of Medicine, 306 N. 14th St., Omaha	Seminar in Pharmacology	6 weeks, tentative, arranged	G. I. Bill of Rights and free
Duke University School of Medicine, Durham, N. C.	Recent Advances in Pharmacology	10 to 12 weekly seminars, arranged	None
	Pharmacology	3 months or longer, arranged	Approximately 25
University of North Carolina School of Medicine, Chapel Hill, N. C.	Pharmacology	Arranged	
PHYSICAL MEDICINE			
New York University College of Medicine, 477 First Ave., New York 16	Physical Medicine	Spring 1946, 3 months	200
At: Bellevue Hospital	Physical Medicine	3 days, March 4, 5 and 6, 1946	12.50
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Physical Medicine for Specialists	2 to 6 months, arranged	per month 100
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.			

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
PHYSIOLOGICAL CHEMISTRY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Review of Physiological Chemistry	Arranged, 10 weeks	\$ 10
	Seminar in Physiological Chemistry	Arranged, part time	5
PHYSIOLOGY			
Indiana University School of Medicine, 1040 West Michigan St., Indianapolis 7	Course in Basic Sciences of Anatomy, Physiology and Pathology	6 months, tentative	Not stated
Columbia University Faculty of Medicine, 630 West 168th St., New York 32	Normal and Pathological Physiology of Water and Electrolyte Balance	Feb. 6-April 12, 1946	30
At: Mount Sinai Hospital	Normal and Pathological Physiology	March 4-15, 1946	75
Columbia University—At: New York Post-Graduate Medical School, 203 East 20th St., New York 3	Recent Advances in Physiology	10 to 12 weekly seminars, arranged, part time	None
Duke University School of Medicine, Durham, N. C.	Physiology	3 months or longer, arranged full time	None
	Physiology	Arranged	Approximately 25
University of North Carolina School of Medicine, Chapel Hill, N. C.	Physiology	Arranged	Approximately 25
POLIOMYELITIS			
Georgia Warm Springs Foundation, Warm Springs, Ga.	Treatment of Acute and Convalescent Poliomyelitis	1st Monday of each month, 5 days	None
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Course in the Kenny Technique in Management of Infantile Paralysis	Arranged	25
PROCTOLOGY (See also Gastroenterology)			
College of Medical Evangelists, 312 N. Boyle St., Los Angeles	Proctology	Jan. 17, 1946, 10 periods	20
At: White Memorial Hospital	Proctology I	Jan. 28-Feb. 2, 1946	registration 5
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11	Proctology II	Apr. 22-27, 1946	tuition 25
At: Pratt Diagnostic Hospital and Boston Dispensary	Proctology II	Jan. 28-Mar. 2	registration 5
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Ward Rounds and Conferences	Apr. 29-May 25, 1946	tuition 100
At: Receiving, Harper and St. Marys Hospitals	Ward Rounds and Conferences	Arranged, part time	10
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Proctology	April 15, 1946, 4 weeks	25
At: Jewish Hospital	Proctology	2 months, arranged	75
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Proctology	2 months, arranged	75
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Clinical Proctology	6 weeks, part time, Jan. 2, April 1, 1946	75
	Proctology (Cadaver) and Clinical Proctology and Gastroenterology	6 weeks, part time, Jan. 2, April 1, 1946	Half fee to physicians in service 200
New York University College of Medicine, 477 First Ave., New York 10	Proctology	Arranged, 10 weeks	Half fee to physicians in service Veterans 125 Civilians 175
PUBLIC HEALTH (See also Medicine)			
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course in Public Health	2 weeks, March 11-23, 1946	75
Harvard University School of Public Health, 55 Shattuck St., Boston	Industrial Hygiene	3 months, Jan. 28-April 27, 1946	also G. I. Bill of Rights 45
	Public Health Practice Venereal Disease Control	6 weeks, April 9-May 24, 1946	35
Albany Medical College, Albany, N. Y.	Extension Course for Grade II Health Officers	1 year, continuously	40
Duke University School of Medicine, Durham, N. C.	Public Health	3 months or longer, arranged, full time	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Public Health	Arranged, 1 to 3 quarters	100
RADIOLOGY (See also Cardiovascular Diseases, Chest Diseases, Electrocardiography and Otorhinolaryngology)			
College of Medical Evangelists, 312 N. Boyle St., Los Angeles	Röntgenology	March 7, 1946, 10 hours	20
American College of Radiology, 20 N. Wacker Drive, Chicago	Postgraduate Course in Radiology	Feb. 4-9, 1946, 1 week	50
At: Philadelphia	Special Residences	3 and 6 months, arranged	Arranged
At: Various medical schools and hospitals	X-Ray Interpretation	Weekly	Not stated
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Fluoroscopy	Weekly	Not stated
	Deep X-Ray Therapy	Weekly	Not stated
	X-Ray Therapy	2 weeks, every 2 weeks	110
	Lecture and Clinical Röntgenology	2 weeks, every 2 weeks	125
Harvard Medical School, Courses for Graduates, 55 Shattuck St., Boston 15	Clinical Röntgenology	2 weeks, every 2 weeks	70
	General Radiology	Jan. 1946, monthly, 1 month	100
At: Massachusetts General Hospital	General Röntgenology	Monthly, 1 month	100
At: Peter Bent Brigham Hospital	Radiology	Apr. 8-11, 1946	registration 5
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11	Radiology	Apr. 8-11, 1946	tuition 25
At: J. H. Pratt Diagnostic Hospital	Diagnostic Röntgenology	Spring 1946, 5 days	25
University of Michigan Medical School, Department of Post-graduate Medicine, 1314 East Ann St., Ann Arbor, Mich.	Diagnostic Röntgenology	Spring 1946, 3 months, part time	Not stated
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	X-Ray Conference	Spring 1946, 3 months, part time	Not stated
Crichton University School of Medicine, 390 N. 14th St., Omaha	Clinical Röntgenology	2 weeks, every 2 weeks	70
	Radiology	Arranged	G. I. Bill of Rights and free

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
RADIOLOGY—Continued			
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Columbia Presbyterian Medical Center	Radiological Physics	Jan 9, 1946, 16 sessions	\$ 50
	Advanced Cardiovascular Roentgenology	Jan 3- March 14, March 21 June 6, 1946	40
	Elementary Roentgenology of the Gastrointestinal Tract	Feb 5 March 26, 1946, part time	40
At: Montefiore Hospital	Advanced Roentgenology of the Gastrointestinal Tract	April 2 May 28, 1946, part time	40
	Supplementary Cardiovascular Roentgenology	Jan. 3 March 14, 1946, part time	35
	Elemental Cardiovascular Roentgenology	March 21 June 6, June 6 Aug 15, 1946, part time	50
At: Mount Sinai Hospital	Recent Advances in Radiology	Feb 23-March 1, 1946, 5 d.	40
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Cardiovascular Roentgenology	April 11, 1946, 8 sessions	20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Radiology	2 months, arranged	150
	Advanced Course in Radiotherapy	4 weeks	Not stated
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Superficial and Deep X-Ray Therapy	4 weeks, 1st of each month	Not stated
	Practical Roentgenological Interpretation and Technique	3 months	Not stated
	Diagnostic Roentgenology and Radiotherapy (Advanced)	6 weeks or 3 months, full time	150 and 300 Half fee to physicians in service
New York University College of Medicine, 477 First Ave., New York 16 At: Lincoln Hospital	Radiology	Spring 1946	100
At: Bellevue Hospital	Refresher Course in Radiation Therapy	Spring 1946, 8 weeks	Arranged
Bowman Gray School of Medicine of Wake Forest College, Winston Salem, N. C.	Specialty Training in Radiology	9 months minimum	Not stated
Duke University School of Medicine, Durham, N. C.	Radiology	3 months or longer	None
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Radiology	5 days, full time, March 18 22, 1946	50
Wisconsin Anti Tuberculosis Association, 324 East Wisconsin Ave., Milwaukee	Interpretation of Chest X-Ray Films	6 weeks, 2 hours per week	None
SURGERY			
(See also Anatomy, Chest Diseases, Gastroenterology, Medicine, Ophthalmology, Otology, Otorhinolaryngology, Pathology and Proctology)			
University of Southern California School of Medicine, 3551 University Ave., Los Angeles At: Los Angeles County Hospital	Review of General Surgery	3 months, every 3 months, beginning Dec. 17, 1945	Tuition 180 Registration 5
Research Study Club of Los Angeles, Inc., 727 West 7th St., Los Angeles	Applied Anatomy and Cadaver Surgery of Head and Neck	Feb. 15, 1946	50 Phys. in service 25
Emory University School of Medicine, 50 Armstrong St., Atlanta Ga	General Surgery	April 8 June 29, 1946, 12 weeks	250
University of Georgia School of Medicine, University Place, Augusta, Ga.	General Medicine and Surgery	1 week, June 1946	None
At: University Hospital			
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course in General Surgery	March 25 April 13, 1946, 3 weeks	125
	Gall Bladder Surgery	1 week, April 15 June 11, 1946	100
	Surgery of the Colon and Rectum	1 week, March 18, April 29, June 10, 1946	100
	Surgical Technique	2 weeks, every 2 weeks, Jan 14, 1946	200
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Vaginal Approach to Pelvic Surgery	1 week, Feb 18, March 18, April 15, May 13, June 10, 1946	100
	Thoracic Surgery	2 weeks, every 2 weeks	125
	1 Month General Surgery	4 weeks, Jan. 28, Feb. 11, March 11, April 8, May 6, June 3, 1946	300
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Courses in Surgery	April 8-June 29, 1946, 3 months	150
	Medical and Surgical Pathological Conferences	Arranged	G. I. Bill of Rights and free
	Ward Walks	Arranged	As above
Creighton University School of Medicine, 306 N. 14th St., Omaha	12 General Lectures on Modern Surgical Procedures	Arranged	As above
	General Surgical Clinics	Arranged	As above
	General Surgery in the Dispensary	Arranged	As above
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Columbia Presbyterian Medical Center	Symposium on General Surgery	May 13 17, 1946	75
At: Mount Sinai Hospital	Surgery of the Gastrointestinal Tract	April 15 May 10, 1946	150
	Symposium on General Surgery	May 13 17, 1946	75
	Blood Transfusion, Blood and Plasma Bank	Arranged, 12 hours	35
	Surgery of the Gastrointestinal Tract	Jan 2 May 27, 1946, part time	200
	Surgical Anatomy as Applied to Colon and Rectal Surgery	Arranged, 12 hours, part time	100
	Seminar in Traumatic Surgery	March 4 16, 1946	90
	Surgical Anatomy as Applied to Thoracic Surgery	Arranged, 12 sessions	200
	Dissection and Surgical Anatomy	Arranged, 24 hours	150
Columbia University—At: New York Post Graduate Medical School, 303 East 20th St., New York 3	Diagnosis and Treatment of Trauma	Arranged, full time	50
	Review of General Surgery for Surgeons	April 1 30, 1946	125
	Diseases of the Liver, Biliary Tract and Pancreas, Preliminary Course	Jan 14 18, 1946	45
	Diseases of the Liver, Biliary Tract and Pancreas, Intermediate Course	Feb 25-March 1, 1946	45
	Diseases of the Liver, Biliary Tract and Pancreas, Advanced Course for Surgeons	May 20-24, 1946	60

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
SURGERY—Continued			
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Peripheral Vascular Disease	14 sessions, arranged	\$200
	Thoracic Surgery	36 hours, arranged	250
	Surgical Technique	75 hours, arranged	375
	Gastrointestinal Surgery	14 sessions, arranged	200
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Surgical Operative Clinic and Lecture Course	6 weeks, full time, Jan. 2, April 1, 1946	100 Half fee to physi- cians in service
	Combined Surgical Course	3 months, full time, Jan. 2, April 1, 1946	350 Half fee to physi- cians in service
	Clinical and Operative (Cadaver) Surgery	6 weeks, full time, arranged	200
New York University College of Medicine, 477 First Ave., New York 16	Recent Advances in Thoracic Surgery	March 1946, 1 month	150
At: Lenox Hill Hospital and Tribor Hospital			
Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.	Specialty Training in Surgery	9 months minimum	Not stated
Duke University School of Medicine, Durham, N. C.	Surgery	3 months or longer, arranged, full time	None
Oklahoma State Medical Association, 210 Plaza Court Building, Oklahoma City	Surgical Diagnosis	1 year, continuous	0
At: Various areas throughout Oklahoma			
University of Oklahoma School of Medicine, 801 N.E. 13th, Oklahoma City	Surgery	4 weeks, Jan. 7-Feb. 2, 1946	50
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in General Surgery	5 days, full time, June 10-14, 1946	50
Southwestern Medical College, 2211 Oak Lawn, Dallas, Texas	Surgery	2 months, arranged	75
University of Texas School of Medicine, 912 Avenue B, Gal- veston, Texas	Surgery	1 week, Spring, 1946	25
University of Vermont College of Medicine, Pearl St., College Park, Burlington, Vt.	Surgery	Beginning of any month	per year 500 or prorated
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Surgery Course for Specialists	2 to 6 months, arranged	per month 100
At: Wisconsin General Hospital	12 week Postgraduate Course Observation Course in Medical and Surgical Subjects	12 weeks, arranged Arranged, 1 to 5 months	125 per month 100
THERAPY			
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Therapeutics	1 month, arranged	100
New York University College of Medicine, 477 First Ave., New York 16	Cutaneous Therapeutics	Arranged, 1 week	Veterans 15 Civilians 25
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Applied Therapeutics	5 days, full time, April 29- May 3, 1946	50
TROPICAL MEDICINE			
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 13	Tropical Medicine	Jan. 2 thr. May 25, 1946	300
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Tropical Medicine and Para- sitology	June 3-7, 1946	45
Columbia University School of Public Health	Tropical Medicine	April 1-May 25, 1946	100
Marquette University School of Medicine, 561 North 15th St., Milwaukee	In the Field of Tropical Diseases	4 weeks, once a week	Nominal
UROLOGY			
(See also Anatomy)			
College of Medical Evangelists, 312 N. Boyle St., Los Angeles	General Urology	Feb. 5, 1946, 6 periods	12
At: White Memorial Hospital			
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Urology and Cystoscopy	4 weeks, every 4 weeks	375
Creighton University School of Medicine, 506 N. 14th St., Omaha	Urology	6 weeks, tentative, arranged	G. I. Bill of Rights and free
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Advanced Course in Urology	March 1-April 30, 1946	250
James Buchanan Brady Foundation of the New York Hospital, 525 East 68th St., New York	Urology	6 months, part time, arranged	500
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Urology	1 month or longer 1st of each month	per month 25
At: Long Island College Hospital			
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Urology	8 months, full time	Not stated
New York University College of Medicine, 477 First Ave., New York 16	Clinical Urology	Spring 1946, 6 weeks	100
Duke University School of Medicine, Durham, N. C.	Urology	3 months or longer, arranged full time	None
Woman's Medical College of Pennsylvania, Henry Avenue and Abbottford Road, Philadelphia 29	Female Urology	16 weeks, 3 hours per week	100
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Course in Urology for Specialists	2 to 6 months	per month 100
VENEREAL DISEASE			
(See also Dermatology and Syphilology)			
Bureau of Social Hygiene, Department of Health, 125 Worth St., New York	Practical Course in Diagnosis Treatment and Control of Venereal Disease	Every 2 weeks	None
At: Central Clinic	Seminar in Diagnosis and Treatment of Venereal Diseases	Spring 1946, 11 sessions	None
Institute for Control of Syphilis, 5100 Spruce St., Philadelphia	Course in Applied Venereal Diseases Epidemiology	3 months, arranged	Arranged
	6 Months Essential Basic Training Course	6 months, arranged	125
	4 Weeks Intensive Review Course	4 weeks, arranged	50
	3 Weeks Venereal Disease Course	3 weeks, arranged	25
	Intensive Training Course in Venereal Disease Control	10 days, arranged	25

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Failure to Order Roentgenogram in Treatment of Fractured Terminal Phalanx of a Finger.

—The patient crushed her right ring finger in a folding bed Aug. 30, 1941. The third day thereafter she consulted the physician defendant, who intimated that the finger was broken. The finger was so swollen, however, that he could not apply splints until two days later, when it was still so swollen and "so crooked that he could not manipulate the finger even yet, but he did put splints on it and left it crooked the way it was at that time." On several occasions thereafter the patient asked the physician about an "x-ray picture," but the physician replied that it would not be necessary to have one taken. Apparently the patient saw the physician every ten days or two weeks during October and November. The finger remained swollen and crooked. About October 25 the patient on her own volition had a roentgenogram taken by another physician but the defendant, although he knew that the roentgenogram had been taken, did not ask to examine it. Just what that roentgenogram showed is not made clear. About November 25, after the patient, according to her testimony, had "told" the physician "what the x-ray showed," he advised her "to remove the splint for a while and see if it would heal any better without it." The patient then inquired about an operation on the finger "to remove the bone shown" in the roentgenogram, but the physician stated that "it wouldn't do any good to rush an operation." In January the patient again inquired concerning an operation and the physician then advised her to have another roentgenogram taken, apparently admitting at that time that he should have had one taken when he first undertook treatment and that any "fault" in the matter of procuring one was all his own. The roentgenogram taken at that time revealed a "fracture of the base of the terminal phalanx, whose shaft . . . [was] markedly displaced." After examining the roentgenogram the physician concluded that because of the lapse of time it would then do no good to operate and referred the patient to an orthopedic specialist, who examined and taped the finger. A few days later the patient removed the tape because of discomfort and when she told the physician defendant this fact apparently the defendant withdrew from the case. A bad result eventuated and the patient subsequently sued the defendant, alleging that the bad result was due to his negligent diagnosis and treatment, attributed to his failure to have a roentgenogram made earlier in the course of his treatment. The trial court entered a judgment of nonsuit, and the patient appealed to the Supreme Court of California.

In considering, said the Supreme Court, whether the judgment of nonsuit in this case was proper, we must resolve every conflict in the evidence adduced in favor of the patient and we must consider every inference which can reasonably be drawn and every presumption which can fairly be deemed to arise in support of the plaintiff, and accept as true all evidence, either direct or indirect, which tends to sustain the plaintiff's case. The only direct expert testimony adduced at the trial was that of the physician defendant. So far as is here material, he testified that in the case of a fracture of the phalanx a splint should be applied "in the position in which healing is most apt to occur" and that was exactly what he did in treating the patient. When he applied the splint, he stated,

"to the extent of clinically treating a fracture of that phalanx I knew that there was a chip off the posterior surface of the phalanx. . . . Any x-ray that might have been taken on September 2 would merely have been a confirmation of my clinical judgment regarding that fracture. . . . At the time this finger was splinted it was still slightly swollen and inflamed from the crushing force of her injury. The finger was brought up in as full extension as possible, and that is all that anybody can do to reduce that type of fracture. There is no such thing as setting the fracture. What you have to do is to get the main bone as closely as possible to the place that is fractured off," and that was done in this case.

The defendant apparently contended that there was a latent arthritic condition present in the patient while he undertook treatment. Such a condition, he stated, tends to retard healing

and calls for additional care on the part of the physician. While he made no laboratory tests for arthritis he depended on his senses, his sight and his sense of touch. While he believed that the patient had a latent tendency toward the development of arthritis there was no acute arthritis present. However, he believed, even if acute arthritis had been present, no material difference could have been made in the treatment, which, in any event, would still be to splint the finger and keep it immobilized in a condition in which healing would be most likely to take place, which is full extension. The physician knew, he testified, that the finger had to be splinted in full extension and while taking a roentgenogram would perhaps have added some slight confirmation to what he did it would not have changed what he did in the slightest, nor would it have changed the eventual result. About four weeks after he first treated the injury, he further testified, at a time just before the plaintiff of her own volition had had the first roentgenogram taken, he realized that the injury was a little slow in healing but he fully expected the fracture to heal and for the patient to have a good result. Even by that time, he stated, it was extremely doubtful to him whether or not the arthritis would have shown definitely in any roentgenogram that might have been taken. Defendant further testified that of eight physicians in general practice in the community in which he practiced, seven had told him that it was their custom to treat such fractures without invariably demanding a roentgenogram.

As indicating the general rule of law that governs in malpractice actions, the Supreme Court quoted from *Engelking v. Carlson* (1939), 13 Cal. (2d) 216, 88 P. (2d) 695:

The law has never held a physician or surgeon liable for every untoward result which may occur in medical practice. It requires only that he shall have the degree of learning and skill ordinarily possessed by physicians of good standing practicing in the same locality and that he shall use ordinary care and diligence in applying that learning and skill to the treatment of his patient. [Citation.] Whether he has done so in a particular case is a question for experts and can be established only by their testimony. [Citations.] . . . Negligence on the part of a physician or surgeon will not be presumed; it must be affirmatively proved. . . . It is true that in a restricted class of cases the courts have applied the doctrine of *res ipsa loquitur* in malpractice cases. But it has only been invoked where a layman is able to say as a matter of common knowledge and observation that the consequences of professional treatment were not such as ordinarily would have followed if due care had been exercised.

The court further quoted from *Bickford v. Lawson* (1938), 27 Cal. App. (2d) 416, 81 P. (2d) 216, as follows:

The necessity of employing an x-ray apparatus in reducing a fractured limb depends entirely upon the circumstances of the particular case. The question as to whether the reduction and treatment of a fractured limb without the use of an x-ray machine constitutes negligence depends upon what an ordinarily skilled physician practicing in that vicinity, in the exercise of due care and professional judgment, would be required to do under like circumstances. The determination of those questions depends upon expert testimony.

The expert testimony, continued the court, to establish a plaintiff's prima facie case in a malpractice action may be that of a defendant. *Lawless v. Calaway* (1944), 24 Cal. (2d) 81, 147 P. (2d) 604; *Anderson v. Stump* (1941), 42 Cal. App. (2d) 761, 109 P. (2d) 1027. We can presume that the defendant in testifying will state his case as favorably to himself as possible. Furthermore, extrajudicial admissions of a physician defendant to have the same legal competency as direct expert testimony to establish the critical averments of the complaint. While it is true that an extrajudicial statement amounting to no more than an admission of bona fide mistake of judgment or untoward result of treatment is not alone sufficient to permit the inference of breach of duty, such an extrajudicial statement may be binding on the physician if it is an admission of negligence or lack of the skill ordinarily required for the performance of the work undertaken. But in reviewing a judgment of nonsuit, where the physician defendant's statements or inferences drawn therefrom conflict, the conflict must be resolved in favor of the patient. In other words, under such circumstances where the statements are reasonably susceptible to more than one meaning, the meaning to be placed on them is that meaning which is favorable to the plaintiff.

According to testimony adduced on behalf of the patient, the physician defendant stated that he should have had a roentgenogram taken "in the beginning" and that the fault in that respect was all his own. The jury would have a right to believe that

the defendant, as a physician, was using the word "should" to import the duty which he, as a physician practicing his profession, owed to his patient in the exercise of ordinary care. As is said in Webster (New Int. Dict., ed. 2):

Ought and should express obligation, *Ought* commonly suggesting duty or moral constraint, *Should*, the obligation of fitness, propriety, expedience and the like

Furthermore, continued the court, coupled with the defendant's statement as to what he should have done "in the beginning" is the admission that failure to have a roentgenogram taken was all his own "fault." The word "fault" in one of its meanings signifies "responsibility for wrongdoing or failure; culpable cause" (Webster's New Int. Dict., ed. 2). See also *Marston v. Pickwick Stages, Inc.* (1926), 78 Cal. App. 526, 248 P. 930. When the physician finally did have a roentgenogram taken it showed a "fracture of the base of the terminal phalanx whose shaft is markedly displaced." It does not require the testimony of an expert witness, under the conditions shown here, to support the conclusion that a piece of bone which is markedly displaced from the larger bone from which it has been detached is not in proper healing position. The roentgenogram ordered by the physician was not ordered and taken until Jan. 2, 1942, and on examining it the physician stated that "he didn't think after this length of time it would do any good to operate on [the finger]." The physician testified that "the condition of the finger was essentially" the same about the first of December as it was after January 2, the time when the roentgenogram was ordered by the physician, but at the earlier date, according to the patient's testimony, the defendant said "it wouldn't do any good to rush an operation." On cross examination the physician admitted that if he had had a roentgenogram taken in the early stages of his treatment he "would have been able to see that the fragment of bone was uniting or out of position" and that it would have made him suspicious that something was keeping it from uniting properly. Yet after the time to which such admission related the physician, still without requiring a roentgenogram, removed the splint to "see if it [the finger] would heal any better without it." When the physician originally splinted the finger, according to the plaintiff, he "left it crooked the way it was at that time," although he later admitted on the witness stand that he "knew the finger had to be splinted in full extension." It is true that he also testified that "the finger was brought up in as full extension as possible, and that is all that anybody can do to reduce that type of fracture." But, continued the court, the jury need not have believed that statement. That statement only created a conflict with the inferences to be drawn from the physician's admissions as to what should have been done in the beginning, as to his culpable negligence in not having a roentgenogram taken earlier, and as to his opinion in January 1942 that "he didn't think after this length of time it would do any good to operate." The implication of this latter statement would seem to be that an earlier operation would have benefited the patient and, hence, that the physician was mistaken in his statement that merely splinting the finger "in as full extension as possible . . . is all that anybody can do to reduce that type of fracture." An extrajudicial admission of "fault" may amount to no more than an admission of bona fide mistake or misfortune and thus be insufficient to establish negligence or it may support the inference that the patient was damaged as a proximate result of the physician's negligence.

In this case, continued the court, we are satisfied that a jury, considering the background of all the other evidence, could have reasonably concluded that the admissions of the physician imported that he had not exercised that reasonable degree of skill and learning and care ordinarily exercised by other physicians of good standing practicing in the community and that as a proximate result of that negligence the patient suffered injury. In other words, the admissions of the physician that he "should" have had a roentgenogram taken "in the beginning" and that he was "at fault" in that regard constitute evidence of a character competent to require that the issue of the physician's negligence be decided as a matter of fact by the jury.

For the reasons stated, the judgment of nonsuit entered by the trial court was reversed.—*Lashley v. Koerber, M.D.*, 156 P. (2d) 441 (Colo., 1945)

Bureau of Investigation

SOME MISCELLANEOUS MEDICAL FRAUDS

A Variety of Schemes Debarred from the Mails

Fraud orders issued by the Post Office Department have frequently been the subject of extensive articles by the Bureau of Investigation in these pages of THE JOURNAL. Following are abstracts of two such fraud orders:

Graygone Vitamin Company.—This New York concern was one of the various firms advertising vitamin products to restore the original color to hair that has turned gray. The Post Office Department has debarred some such enterprises from the mails on the ground that they constituted frauds on the public. In this case, after a lengthy investigation, the Post Office cited the proprietor and sole owner, Elms A. Kahn, to show cause why similar action should not be taken against his business. Kahn appeared at the hearing held in Washington Oct. 26, 1944, but was not represented by counsel. On that occasion the Post Office Department presented evidence that Kahn and his concern had represented that their "Graygone Vitamin Tablets," when used as directed, would restore the "natural lustre and color" to gray hair, that it would remedy the deficiency which causes hair to turn gray, that "occasional use" of the product as directed would prevent the hair from graying, and that users would obtain results identical with or similar to those described in alleged testimonials included in the advertising. Kahn orally presented a general denial of the charge that these representations and promises were false and fraudulent. The Post Office inspector who had conducted the investigation of the case testified as to the claims made in the concern's literature regarding the ability of its product to restore the original color to gray hair. A medical officer of the Food and Drug Administration also testified for the government, stating that he was familiar with modern scientific teaching and opinion relative to nutrition, and to the use, value and functions of vitamins. He presented evidence that pantothenic acid (which, with calcium, the label of Graygone tablets declared to be present in the product) is one of the vitamins of the B complex, that it has not been proved scientifically to be essential in the diet of humans or to be, through deficiency, the cause of any distinct disease entity. He further showed that pantothenic acid is widely distributed in common foodstuffs ordinarily used by the American public and that there is little likelihood of its being deficient in the normal American human diet. His further testimony was to the effect that the chief cause of gray hair lies in the natural aging processes of the human system with the passing of time, though the condition may also result from severe debilitating diseases, glandular disorders, undernourishment and some other causes. He cited a scientific experiment that he and other physicians had conducted to determine whether pantothenic acid had any value in the restoration of gray hair of human beings to the former natural and youthful color thereof, which tests had shown the contrary. Since the defendant in the case presented no valid contradictory testimony, a fraud order was issued on Jan. 3, 1945, debarring from the mails the Graygone Vitamin Company, also known simply as Graygone, together with one J. T. White, Sales Manager, and the officers and agents.

Victor Press.—Under this name a William J. Dubler, M.D., sold through the mails from Camden, N. J., an alleged treatment called the "Natural Health Method," which was publicized through a book called "Are Appendicitis Operations Necessary?" This represented that Dubler had "developed a new and revolutionary treatment for appendicitis, after nearly fifty years devoted to practice, study and research"; that the Method, "when used as directed, will cure acute and chronic appendicitis and abscess of the appendix, without the use of drugs, operations or freezing, that the treatment was 'a safe, certain, prompt and permanent cure for all cases, kinds and complications of appendicitis,' and that persons suffering from this condition, whether acute or chronic, could cure themselves by self treatment after reading the book five times. Dubler was graduated from Baltimore University School of Medicine in 1898, and in 1899 obtained a license to practice medicine in New Jersey, which was reported in 1942 to have been indefinitely suspended because of a charge against him of fraudulent advertising. As long ago as 1913 he was advertising himself as an "Office Specialist" in Atlantic City newspapers. He has also advertised in *Physical Culture* and, for a time, at least, conducted "Dr. Dubler's Private Sanatorium and Natural Health School" at Camden, which advertised "No Drugs—No Serums—No X Rays—No Radium—No Operations." After the Post Office Department had investigated his recent activities, it summoned him to a hearing in Washington, to show cause why he should not be debarred from the mails on the charge of obtaining money under false and fraudulent pretenses. At the hearing a Senior Medical Officer of the Food and Drug Administration testified for the government, showing that he had had extensive experience in studying and treating various types of appendicitis, including the surgical treatment thereof. He discussed the various forms that the disease takes and their scientific treatment, without which, he showed, the condition can be extremely dangerous. Further, he pointed out the risk to an appendicitis patient in following Dubler's advice. This advice, Dubler admitted, differed in every phase from orthodox medical opinion. His testimony frequently was evasive and uncertain as to medical matters incident to his diagnosis and treatment of appendicitis, and he frequently confessed ignorance of medical facts relating thereto. Further, he admitted that he had served a sentence in a Pennsylvania prison for "conspiracy to perform abortions." The findings in the case were that the charges against Dubler were entirely sustained by the evidence, and on July 13, 1944, a fraud order was issued against William J. Dubler, the Victor Press, and their officers and agents.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

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- Treatment of Trichomonas Vaginitis with Sulfonamide Compound. Helen M. Angelucci.—p. 336.
- Transmission of Penicillin to Amniotic Fluid and Fetal Blood in the Human. J. H. E. Woltz and H. A. Zintel.—p. 338.

Vitamin K and Infant Mortality.—Potter reports a study of two groups of infants: one of 6,560 infants weighing over 1,000 Gm. born in the two year period when vitamin K was given to the women before delivery and a group of 6,630 infants born during the next twenty-two months when vitamin K was not administered. The total fetal and infant mortality rate per thousand births of 29.8 for the first two years is higher than that of 25.8 for the last two years in spite of the fact that no change of significance occurred in the incidence of primiparity, premature delivery, mode of delivery or other known factor. The mortality rate for liveborn infants is identical in the two series, as is the number of infants who showed evidence of hemorrhage on postmortem examination. Potter concludes that no decrease in infant or fetal mortality can be expected to result from the routine administration of vitamin K.

Responses to Gonadotropic Therapy.—Davis and Hamblen have shown that the sequential and cyclic administration of equine and chorionic gonadotropins (one-two cyclic gonadotropic therapy) restores to a fertile status a significant number of women with hypofunctioning ovaries. A commercial product which contains both pituitary synergist and chorionic gonadotropin is now available for therapeutic use. The authors report a comparative study of the two methods of treatment in 21 patients who are placed into four clinical groups: (1) those with deficient sexual maturation whose menarches had not occurred (4 patients), (2) those with infrequent and/or scanty estrogenic bleeding (6 patients), (3) those with prolonged and/or excessive estrogenic bleeding (5 patients) and (4) those with presumed ovarian sterility associated with bleeding from immature progestational endometriums (6 patients). The primary criterion for an evaluation of these responses was a study of endometrial biopsies taken prior to and following treatment. None of the patients with deficient sexual maturation responded to either therapy. Patients with infrequent and/or scanty estrogenic bleeding and those with prolonged and/or excessive estrogenic

bleeding responded to both therapies. More positive responses were associated with one-two cyclic gonadotropic therapy. No pregnancies were associated with either therapy in the group of patients with presumed ovarian sterility associated with bleeding from immature progestational endometriums. The authors conclude that cyclic therapy with a preparation containing "pituitary synergist" and chorionic gonadotropin (30 "synergy units" intramuscularly daily from the fifth through the twenty-fourth day of the cycle) may produce progestational endometriums in patients experiencing various grades of estrogenic bleeding. This therapy yields a lower incidence of positive responses than one-two cyclic gonadotropic therapy, which employs singly and sequentially equine and chorionic gonadotropins.

Annals of Surgery, Philadelphia 122:289-448 (Sept.) 1945

- Reparative Surgery of Compound Battle Fractures in Mediterranean Theater of Operations. O. P. Hampton Jr.—p. 289.
- Management of Intrathoracic and Thoracoabdominal Wounds in Combat Zone. H. E. Snyder.—p. 333.
- Combined Injuries of Thorax and Abdomen. C. S. Welch and J. E. Tuhy.—p. 358.
- *Compound, Comminuted Skull Fractures Produced by Missiles: Report Based on 100 Cases. E. H. Campbell Jr.—p. 375.
- Surgical Management of Colon and Rectal Injuries in Forward Areas. L. E. Hurt.—p. 398.
- *Management of War Injuries of Extraperitoneal Rectum. E. J. Croce, V. S. Johnson and T. B. Wiper.—p. 408.
- Simultaneous Occurrence of Acute Appendicitis and Malaria. I. S. Ravdin and J. P. North.—p. 432.
- Right Paraoduodenal Hernia. F. H. Lahey and W. Trevor.—p. 436.
- Benign Capillary Hemangioma of Digital Flexor Tendon Sheath: Case Report. G. V. Webster and C. F. Geschickter.—p. 444.

Skull Fractures.—Summarizing his observations on 100 cases of compound comminuted fractures of the skull, Campbell says that inner table fractures were sometimes overlooked and occasionally led to serious complications. Tripod incisions often gave trouble; it is recommended that they be avoided when possible. Convulsions were uncommon in the first few weeks; their occurrence was sometimes an early manifestation of abscess formation. Subdural hematoma was present in but 2 cases. Superficial wound infections of varying degrees developed in 19 cases, while in 22 the infections were deep seated. These were manifested by abscess, meningitis or cerebral fungus. There were five deaths, all of which occurred in the latter group. Incomplete débridement was the largest single factor contributing to wound infection. In those cases in which all bone fragments had been removed infection was uncommon and seldom deep, whereas if débridement had been incomplete or not performed infection was common and usually deep. Bacteria cultured from these wounds were principally skin inhabitants of low virulence. Treatment consisted in evacuation of pus and removal of associated bone fragments and/or metallic foreign bodies as well as of adjacent necrotic tissue and old blood. Abscess capsules were disturbed as little as possible. Sulfonamide therapy was employed as an adjuvant. Failures resulted only in those 5 cases in which, for one reason or another, this procedure was not carried out. Experience, judgment and skill, as well as the proper neurosurgical armamentarium, are prerequisite to good primary débridement.

Injuries of Extraperitoneal Rectum.—Croce and his associates treated patients in various stages of convalescence from war wounds of the rectum. They feel that progress has been made during this war in the management of extraperitoneal injuries of the rectum. They emphasize the part played by surgical prophylaxis in contrast to the supportive measures of blood, plasma and chemotherapeutic agents. The latter may influence the early mortality rate in assisting recovery from shock but not the morbidity or late mortality from chronic sepsis. These supportive measures have proved to be merely adjuvants and not substitutes for early and properly executed surgery. The authors stress the following points: 1. Perforation of the intraperitoneal portion of the rectum results in fecal contamination of the cellular tissue of the intraperitoneal space. This space communicates with the retroperitoneal space posteriorly over the sacrum and may thus result in fulminating and widespread retroperitoneal sepsis. 2. Even if the perforation cannot be located but there is presumptive evidence of its presence or potential development from contusion or infarct of the rectum

as judged from the course of the missile and the presence of a large hematoma in the infraperitoneal space, an effective sigmoid colostomy should be established at once. 3. A sigmoid colostomy alone will not prevent infection of the infraperitoneal space, although the infection is likely to be less widespread and fulminating. In addition, the infraperitoneal perirectal space must be saucerized by coccygectomy and loosely packed. 4. Mere saucerization of the perirectal space, while life saving and prophylactic against spreading retroperitoneal sepsis, is not ideal treatment. Unless the perforation is located and closed, a persistent fistula may develop.

Archives of Otolaryngology, Chicago

42:91-156 (Aug.) 1945

- Otologic Research in Britain: Notes on Its Progress. C. S. Hallpike—p. 91.
Labyrinthitis Following Purulent Infection of Middle Ear: Histopathologic Studies. F. Altmann and J. G. Waltner.—p. 93.
Physiologic Effect of Pressure Changes with Reference to Otolaryngology. A. R. Behnke—p. 110.
Structure of External Nose: Study from Point of View of Plastic Surgery. B. L. Griesman—p. 117.
Otitis Externa and Its Treatment. E. Simon—p. 123.
Fracture Dislocations of Cartilaginous Nose. Anatomicopathologic Considerations and Treatment. J. W. Mahnac—p. 131.
Tests for Unilateral Deafness. R. E. Priest—p. 138.
Deafness, Its Causes and What Can Be Done About It. M. H. Lurie.—p. 144.

Archives of Pathology, Chicago

40:81-140 (Aug.) 1945

- Sulphydryl Protection of Liver. A. Brunshwig, S. Nichols, R. R. Bigelow and J. Miles.—p. 81.
Hematuria Due to Papillary Hemangioma of Renal Pelvis. A. E. Rapoport.—p. 84.
Cancerous Synovial Tumors. P. H. Hartz.—p. 88.
Diffuse Hepatic Necrosis Caused by Sulfadiazine. P. A. Herbut and T. M. Scaricciottoli.—p. 94.
Cystic and Compact Pulmonary Sclerosis in Progressive Scleroderma. Sophia Getzowa.—p. 99.
Mixed Tumors of Skin. Report of Cases, with Consideration of Histogenesis of Mixed Tumors of Organs Derived from Ectoderm. R. P. Morehead.—p. 107.
Rh Blood Factors: Orientation Review. W. C. Boyd.—p. 114.

Hepatic Necrosis Caused by Sulfadiazine.—Herbut and Scaricciottoli report 2 cases of acute diffuse hepatic necrosis resulting from sulfadiazine therapy. In 1 case sulfonamide compounds had not previously been given, whereas in the other a course of treatment with sulfadiazine had been given one month before a second course was administered. It is thought that while focal hepatic necrosis may result from direct chemical action of the sulfonamide compounds on the liver cells, diffuse hepatic necrosis may be the result of inherent or acquired hypersensitivity of the liver to the drug. Of the two types of renal damage ascribed to the sulfonamide compounds, the authors believe that the type in which crystals or concretions are found in and beyond the renal tubules is due to the direct action of the sulfonamide compounds on the kidney. The more severe form, showing tubular necrosis, casts and interstitial congestion and edema, with foci of inflammatory cells, is due to the accompanying disease process, which may be infection, intestinal obstruction, jaundice or some other condition and not to direct action of the drug on the renal parenchyma. The 2 cases reported here emphasize the fact that sulfadiazine should be used cautiously.

Pulmonary Sclerosis in Progressive Scleroderma.—Getzowa observed peculiar cystic changes in the lungs in 2 cases of scleroderma. These cases showed disappearance of alveolar tissue in the lung as a result of two distinct processes: lysis of the alveolar walls and progressive sclerosis. Cystic pulmonary sclerosis occurred with a hyaline or hyaline fibrous process involving the alveolar walls, accompanied by the disappearance of capillaries superimposed on generalized diffuse simple fibrosis of the alveolar walls. After dissolution of the hyaline portions of the walls, the process led to disappearance of alveolar parenchyma. After a preliminary fibrous stage the alveolar parenchyma was replaced by cystically enlarged bronchiolar proliferations, a process for which the name "cystic bronchiolar hyperplasia" is proposed. The cysts are present in the subpleural zones with the exception of the apexes and the hilar regions. Compact pulmonary sclerosis developed on the basis

of diffuse alveolar fibrosis of a progressive nature with disappearance of capillaries and parenchyma, owing to progressive narrowing of alveoli. There was no dissolution. The capillaries persisted and with them the alveoli, and extensive interalveolar fibrosis developed. The bronchi and bronchioli which remained intact in the fibrous areas were surrounded by peribronchial proliferations forming adenoma-like zones.

Bulletin of Johns Hopkins Hospital, Baltimore

77:1-82 (July) 1945

- *Salicylate and Rheumatic Activity: Objective Clinical Histologic Study of Effect of Salicylate on Rheumatic Lesions, Those of Joints and Tendon Sheaths in Particular. G. E. Murphy.—p. 1.
Hypersensitivity to Iodine as Cause of Periarteritis Nodosa. A. R. Rich.—p. 43.
Polymyelitic Changes in Multinucleated Neurons, with Special Reference to Site of Action of Virus in Cell. D. Bodian.—p. 49.
Dietary Role of Histidine in Immature and Adult Rat. A. A. Albanese and Jane E. Frankston.—p. 61.

Salicylate and Rheumatic Activity.—Murphy studied the clinical course and histologic character of rheumatic lesions in 12 actively rheumatic patients treated with large doses of salicylate. In 6 patients the size of involved joints and in 6 patients the size and skin temperature of the involved joints were followed by direct measurement in an attempt to determine the effect of salicylate on the local rheumatic inflammation. The results in this small series of cases do not support the widely accepted view that salicylate reduces rheumatic joint inflammation. In several of these patients characteristic rheumatic lesions developed in a variety of sites during the course of salicylate therapy. In 2 cases tendon sheath nodules developed with serum salicyl levels above 300 and 450 micrograms per cubic centimeter respectively. In another case a tenosynovitis developed with the serum salicyl level between 350 and 265 micrograms per cubic centimeter. A florid rheumatic pneumonitis developed in a fatal case with the serum salicyl level above 300 micrograms per cubic centimeter. Another striking finding at necropsy in this case was the fresh fibrin thrombi in the capillaries of practically every glomerulus in sections of both kidneys. In a fifth patient an episcleral nodule developed with the serum salicyl level between 450 and 600 micrograms per cubic centimeter. In a sixth patient joint rheumatic activity became manifest for the first time during the course of heavy salicylate therapy (after fifteen days of large doses of salicylate) associated with electrocardiographic evidence of increased cardiac rheumatic activity.

Cancer Research, Baltimore

5:497-560 (Sept.) 1945

- Some Influences of Hormones on Growth and Persistence of Transplanted Testicular Tumors. W. U. Gardner.—p. 497.
Incidence of Adrenal Cortical Carcinoma in Male Mice of Extreme Dilution Strain Over One Year of Age. G. W. Woolley and C. C. Little.—p. 506.
Estrogen Production by Sertoli Cell Tumors of Testis. C. Huggins and P. V. Moulder.—p. 510.
Induction and Prevention of Fibromyoeptelioma of Utricular Bed in Male Guinea Pigs. A. Lipschütz, D. Yamine, J. Schwarz, S. Bruzzone, J. Acuña and S. Silberman.—p. 515.
Potential Differences in Skin of Mice During Carcinogenesis. H. Burrows, Edna M. F. Roe and B. Schober.—p. 524.
Statistical Analysis of 2,407 Admissions to Tumor Clinic of Veterans Hospital, Hines, Ill., During 1943. R. Schrek and G. R. Allaben.—p. 539.

Connecticut State Medical Journal, Hartford

9:587-676 (Aug.) 1945

- Industrial Dehydration. J. J. Larson.—p. 600.
Comment on "The Use of E. S. Wasland"—p. 602.
Scrub Typhus. J. C. Seymour.—p. 604.

9:679-754 (Sept.) 1945

- Some Recent Advances in Control of Infectious Diseases. F. G. Blake.—p. 679.
Ten Year Report of Tumor Registry of Yale University School of Medicine: Based on Total Admission for Cancer to New Haven Hospital, 1935-1944. Mary C. MacDonald.—p. 687.
How Dangerous to the Community are State Hospital Patients? L. H. Cohen and H. Freeman.—p. 697.
Note on Sciatica, Backache and Intervertebral Disks. P. P. Swett.—p. 701.
Electric Shock Therapy: Its Use in General Hospital. A. H. Jackson.—p. 703.

Diseases of Chest, Chicago**11:375-496 (Sept.-Oct.) 1945**

- Analysis of 100 Cases of Minimal Pulmonary Tuberculosis. H. O. Puelma and G. Grebe.—p. 375.
 Loeffler's Syndrome (Transient Pulmonary Infiltrations with Eosinophilia): Report of Case and Review of Available Literature. H. I. Spector.—p. 380.
 Bronchoscopy in Pulmonary Tuberculosis. R. Tapia Acuña.—p. 392.
 Introduction: Refresher Course on Diseases of Chest. M. Joannides.—p. 398.
 Present Status of Tuberculosis in Children. A. S. Webb.—p. 399.
 Management of Minimal Tuberculosis. J. B. Novak.—p. 405.
 Pregnancy in Tuberculosis. F. M. F. Meixner.—p. 409.
 Chemotherapy of Tuberculosis. C. K. Petter.—p. 419.
 Indications for Collapse Therapy. R. Davison.—p. 423.
 Recent Advances in Bronchoscopic Technic. P. H. Holinger.—p. 427.
 Treatment of Bronchiectasis. E. R. Levine.—p. 431.
 Surgical Procedures in Nontuberculous Diseases. R. B. Bettman.—p. 440.

Journal of Nervous and Mental Disease, New York**102:221-326 (Sept.) 1945**

- Therapeutic Efficacy of Electroconvulsive Therapy: Comparative Classification of Treatment Results Determined With and Without Use of Time Factor in Their Evaluation. G. H. Alexander.—p. 221.
 Electroshock Therapy, with Special Reference to Relapses and Effort to Prevent Them. E. F. Kerman.—p. 231.
 Outcome in Dementia Precox Under Electric Shock Therapy as Related to Mode of Onset and to Number of Convulsions Induced. L. Lowinger and J. H. Huddleson.—p. 243.
 Neurogenic Pulmonary Edema Due to Puncture Wound of Medulla Oblongata. B. Schlesinger.—p. 247.
 *Chronic Delirium as Terminal Manifestation of Organic Dementia. M. Levin.—p. 256.
 Macrosterognosis: Unusual Phenomenon in Case of Thalamic Syndrome. L. Halpern.—p. 260.
 Cultural Influences in Alcoholism. R. S. Banay.—p. 265.
 Pyknolepsy, with Report of Its Occurrence in Case of Schizophrenia. J. M. Schneck.—p. 276.
 Physical Manifestations in Mental Disease. G. N. Thompson.—p. 280.
 Acute Psychosis Following Therapeutic Malaria in Case of Neurosyphilis: Report of Case. L. I. Kaplan, D. J. Flicker, F. T. Becker and H. S. Read.—p. 285.
 Coprophagy in Absence of Insanity: Case Report. M. M. Kessler and G. E. Poucher.—p. 290.
 Frequency of Blinking in Mental Illness: Measurable Somatic Aspect of Attitude. M. Ostow and Miriam Ostow.—p. 294.

Chronic Delirium in Organic Dementia.—Patients with organic dementia who become delirious are divided into two groups by Levin. In one group the delirium is produced by a toxemia. Here the delirium comes on acutely and clears up after the patient has been rid of his toxemia. In the other group the delirium is unrelated to any toxemia; it comes on furtively after the dementia has reached a certain degree of severity and, once established, persists months and even years until death. It is a mistake to say that delirium is always transitory. It is a symptom of damage to the highest cerebral centers and is transitory if that damage is toxic and reversible but is permanent if the damage is destructive and irreversible. The psychiatric picture of senile delirium and of paralytic delirium is in all essential respects indistinguishable from that of toxic delirium. The distinction between toxic and senile (and between toxic and paralytic) delirium can be made only in the light of the history, the presence or absence of toxemia and the outcome.

Journal of Nutrition, Philadelphia**30:151-224 (Sept.) 1945**

- Requirement of Turkey Poults for Vitamin B₆. L. R. Richardson, A. G. Hogan and H. L. Kempster.—p. 151.
 Vitamin A and Carotene in Nutrition of Guinea Pig. Lillian S. Bentley and Agnes F. Morgan.—p. 159.
 Nutritional Studies on Milk Fat: I. Growth of Young Rats Fed Milk Fat and Certain Synthetic Glycerides as Supplements to Fat Free Diet. J. L. Henderson, E. L. Jack, S. Lepkovsky and Della F. Reid.—p. 169.
 Id.: II. Growth of Young Rats Fed Glyceride Fractions Separated from Milk Fat. E. L. Jack, J. L. Henderson, Della F. Reid and S. Lepkovsky.—p. 175.
 Enzymatic Relationships in Utilization of Soybean Oil Meal Phosphorus by Rat. R. R. Spitzer and P. H. Phillips.—p. 183.
 Physiologic Availability of Vitamins: III. Effect of Dietary Ascorbic Acid Oxidase. M. Hochberg, D. Melnick and B. L. Oser.—p. 193.
 Id.: IV. Inefficiency of Live Yeast as Source of Thiamine. M. Hochberg, D. Melnick and B. L. Oser.—p. 201.
 Estimation of Relative Nutritive Value of Vegetable Proteins by Two Chemical Methods. R. J. Evans and J. L. St. John.—p. 209.
 Observations on Monomethylaminoethanol and Dimethylaminoethanol in Diet of Chicks. T. H. Jukes, J. J. Oleson and A. C. Dornbush.—p. 219.

Michigan State Medical Society Journal, Lansing**44:941-992 (Sept.) 1945**

- Cooperation Between Industrial Physicians, Industrial Medicine and Private Practitioners. W. B. Harm.—p. 941.
 Cooperation Between Industrial Physicians and Private Practitioners. E. A. Irvin.—p. 945.
 Selective Placement of Workers: Personnel Manager's Viewpoint. O. L. Beardsley.—p. 949.
 Health Maintenance Engineering in Relation to Industrial Health. R. P. Warren.—p. 952.

Military Surgeon, Washington, D. C.**97:177-264 (Sept.) 1945**

- Use of Medical Units in Amphibious Landing. W. J. Shaw.—p. 177.
 Two Years of Cooperation in Military Venereal Disease Control. E. H. Harris and R. H. Abrahamson.—p. 184.
 Extraperitoneal Closure of Colostomy: Report of 15 Cases. L. S. Pilcher and O. E. Nadeau.—p. 190.
 Diagnosis and Treatment of Internal Derangements of Knee Joint. J. C. Pickett.—p. 198.
 Skin Grafting. J. G. Kostrubala.—p. 203.
 Hypertension in Army General Hospital. M. D. McFarland.—p. 209.
 Observations on Physiology, Metabolism and Treatment of Severe Burn. S. H. Sturgis.—p. 215.
 *Observations on "Jungle Rot." J. S. Travis.—p. 224.
 The Commoner Dermatoses Observed in the Italian Theater. I. I. Lubowe.—p. 225.
 With the Army on Okinawa. R. R. Beck.—p. 232.

"Jungle Rot."—According to Travis the term "jungle rot" is a misnomer for fungous infections of varied etiology in the tropics. The characteristic lesion is a circular pustule varying in size from $\frac{1}{8}$ to $\frac{1}{2}$ inch, with a distinct elevation of the superficial layers of skin. The usual sites are the axillae, the adjacent surfaces of the upper part of the arm and the groin. The lesions apparently spread by extension to contiguous surfaces and show progressive outcroppings, some being frankly bullous and others simply papular in the early stages. Some of these lesions have been in existence for six weeks despite medical attention. Travis was able to cure approximately 50 such cases in from four to six days by means of a mixture of alkyl dimethyl benzyl ammonium chlorides. The circinate, pustular bleb is incised with a lancet scalpel after primary skin antisepsis with a dilution of the mixture. The superficial ulceration is rubbed with the mixture on a cotton tipped applicator. This process is repeated two times daily for approximately two days. By the third day treatment is nearing completion and lesions heal by primary intention.

New Orleans Medical and Surgical Journal**98:91-144 (Sept.) 1945**

- *Ruptured Uteri: Analytical Report of 64 Cases Managed at Charity Hospital of Louisiana at New Orleans, with Review of Literature. W. D. Beacham and G. A. Varino.—p. 91.
 Rupture (Intraperitoneal, Intraintestinal and Intravascular) of Suppurative Pelvic Masses, with Analysis of 43 Cases from Charity Hospital of Louisiana at New Orleans. H. E. Miller.—p. 115.
 Infiltration Therapy of Subacromial Bursitis with Calcification. I. W. Kaplan and B. L. Hawkins.—p. 123.
 Tularemia. R. L. Pullen and B. M. Stuart.—p. 126.

Ruptured Uterus.—Beacham and Varino review 64 cases of rupture of the pregnant uterus occurring from 1912 to 1941 at the Charity Hospital of Louisiana at New Orleans. The high maternal mortality (60.93 per cent) and fetal fatality (73.43 per cent) in this and other large hospital series can be explained in part on the basis that complicated and mismanaged labors gravitate to hospitals. Forty-five of the Charity Hospital cases were designated as emergencies at the time of admission. Evidence of shock during or following labor should call for a prompt consideration of the possibility of ruptured uterus. Rupture of the uterus after "low" cesarean section is rare. Nevertheless, every woman who has undergone a cesarean operation must receive close supervision during each subsequent pregnancy. Classic section cicatrices are particularly vulnerable to rupture, providing foundation for the statement "once a classic section always a section." A woman in this group had undergone one classic and two low operations. Rupture occurred at the site of the classic incision. Uterine rupture subsequent to myomectomy is rare. Rupture of the uterus requires immediate therapeutic action. This series and a study of reported cases substantiate the belief that hysterectomy is the procedure of choice. The administration of blood and in many cases of plasma also, with other anti-shock measures, is of great value.

New York State Journal of Medicine, New York

45:1807-1918 (Sept. 1) 1945

- Incidence of Carditis in Rheumatoid Arthritis. W. Feiring.—p. 1855.
 *Vitamin E in Treatment of Myopathies: Preliminary Reports on Its Topical Use in Fibrositis. M. Ant.—p. 1861.
 Hemangioma of Mediastinum Causing Death in Newborn. V. W. Bergstrom.—p. 1867.
 Traumatic Biliary Cyst of Lesser Sac (Omental Bursa): Operation; Recovery. G. D. Nammack, F. H. Herrman and S. Hirsch.—p. 1871.
 Obliterative Arteritis in Fingers Due to Occupational Trauma. J. Van Duyn.—p. 1873.

45:1919-2030 (Sept. 15) 1945

- Principles in Treatment of Chronic Headache. A. P. Friedman and C. Brenner.—p. 1969.
 Essential Approach to Rehabilitation. D. R. Salmon.—p. 1972.
 Evaluation of Ectopic Pregnancy with Selective Data from 127 Consecutive Cases. S. L. Siegler.—p. 1974.
 Penicillin and Other Antibiotics as Chemotherapeutic Agents in Wound Infections. E. Neter.—p. 1982.
 Crisis in Addison's Disease Precipitated by Acute Appendicitis. P. Leavitt.—p. 1987.
 Postpartum Intestinal Obstruction Due to Adhesion Bands. A. L. Henkin.—p. 1989.
 Epidemic Keratoconjunctivitis Cured Through Combination of Penicillin and Sulfasuxidine. M. Jacobson and N. W. Levin.—p. 1990.

Vitamin E in Fibrositis.—Thirty-one patients were treated with vitamin E in the form of an ointment which contained 30 per cent of solvent-extracted wheat germ oil. Of these 31 patients 19 received inunction therapy only. In 6 the external application was supplemented by the oral administration of 3 mg. capsules of mixed tocopherols daily. In 4 the external application was supplemented by a diet high in vitamin E (green leafy vegetables, lettuce and whole wheat bread). Only 1 patient received all three measures, 1 received oral therapy alone and the other oral therapy with a high vitamin E diet. The patients ranged in age from 28 to 66 years; 8 were women and 24 men. The symptoms had been present for three weeks to five years. In some cases the condition affected only a small area, such as both hands; in others much greater areas were involved. Treatment lasted from two to sixteen weeks. Improvement was pronounced in 20 cases, fair in 9 and absent in 3 cases. Of the cases in which only inunction therapy was administered more than two thirds showed excellent results, the others fair improvement. The less favorable results obtained in those receiving other forms of vitamin E therapy indicate that oral and other therapy is not the determining factor in reinforcing the action of external application of vitamin E.

Surgery, Gynecology and Obstetrics, Chicago

81:337-356 (Oct.) 1945

- *II. Value of Vaginal Smear in Diagnosis of Uterine Cancer: Report of 1,015 Cases. J. V. Meigs, Ruth M. Graham, M. Fremont-Smith, L. T. Janzen and C. B. Nelson.—p. 337.
 Operative Technique of Complicated Vesicovaginal and Urethrovaginal Fistulas. S. N. Hayes.—p. 346.
 Saphenofemoral Ligation with Immediate Retrograde Injection. H. O. McPheeters.—p. 355.
 Absorbable Gelatin Sponge and Thrombin for Hemostasis in Neurosurgery: Experimental and Clinical Observations. C. Pilcher and W. F. Meacham.—p. 365.
 Excision of Fractured Patella. A. A. Schmier.—p. 370.
 Inactivation of Penicillin by Various Gram Negative Bacteria. W. A. Altmeier.—p. 379.
 Irreducible Intussusception in Infants: Report of 2 Successful Primary Resections. L. S. Fallis and K. W. Warren.—p. 384.
 Surgical Aspect of Intestinal Amebiasis. P. Hawe.—p. 387.
 Surgical Treatment of Injuries of Brain, Spinal Cord and Peripheral Nerves. J. E. Scarff.—p. 405.
 *Thiouracil—Its Use in Preoperative Treatment of Severe Hyperthyroidism. F. H. Lahey, E. C. Bartels, S. Warren and W. A. Meissner.—p. 425.
 Esophagogastrotomy in Treatment of Cardiospasm. O. T. Clagett, H. J. Moersch and A. Fischer.—p. 440.
 Chondromalacia of Patella. E. F. Cave, C. R. Rowe and L. B. K. Yee.—p. 446.
 Changes in Chronaxia During Degeneration and Regeneration of Experimentally Produced Lesions of Sciatic Nerve of Cat. L. J. Pollock, J. G. Golseth and A. J. Arief.—p. 451.
 Experimental Cholecystitis: Final Results of Vaccine and Filtrate Therapy. M. E. Rehfsuss and G. M. Nelson.—p. 455.

Vaginal Smear in Diagnosis of Uterine Cancer.—In 1943 Meigs and his associates reported 220 cases studied for cancer by vaginal smear. Since then the authors have studied an additional 795 cases, making a total of 1,015 cases, with a total error of 4 per cent. The patients for this study came from the Vincent Memorial wards and the Tumor Clinic of the

Massachusetts General Hospital and from the private practices of several physicians. In this series of 1,015 cases microscopic section revealed cancer in 154. Of these 154 positive cases 16 were incorrectly called negative by vaginal smear. This is an error of 10.3 per cent. The mistakes in this group of cases fall into two categories. The first includes smears in which cancer cells were present but were not seen on the original examination of the slide. These cells were missed because not every field was examined. Seven of 16 mistakes were of this type. The second group are those in which no cancer cells were found, even after the slides were reviewed. We must assume that in these 9 instances malignant cells did not exfoliate or that degeneration of the malignant cells had occurred. To illustrate the value of the vaginal smear in the early diagnosis of cancer the authors present 8 cases diagnosed primarily by vaginal smear. They stress that the vaginal smear and biopsy are complementary technics which, used together, will enhance the effectiveness of the diagnostic clinic. Large numbers of women may be screened and those with positive smears studied further by biopsy. The authors do not regard a negative smear as excluding cancer, nor do they regard a positive smear, without biopsy corroboration, as an indication for surgery.

Thiouracil in Preoperative Treatment of Hyperthyroidism.—Lahey and his collaborators employed thiouracil in the preoperative management of 190 severely toxic hyperthyroid patients. Both types of hyperthyroidism were represented in this group—primary hyperthyroidism, and adenomatous goiter with hyperthyroidism. Response to thiouracil therapy was equally satisfactory in the two groups. In the first 100 patients treated there were 85 females and 15 males. The average age was 45 years. Forty-four patients were over 50 years of age. Almost half, 43 patients, had had hyperthyroidism for more than two years. The average basal metabolic rate was +49; 54 patients had initial rates over +45. Only those with hyperthyroidism and associated heart failure or those extremely ill from hyperthyroidism were admitted to the hospital. In the former group, combined cardiac and thiouracil treatment was begun, and when cardiac compensation was restored after ten to fourteen days these patients were discharged to carry on treatment at home. In the latter group improvement was usually sufficient after seven to ten days to permit continuance of treatment at home. For most patients thiouracil treatment is ambulatory throughout. Thiouracil was administered in a total daily dose of 0.6 to 0.2 Gm. at 7 a. m., 2 p. m. and 9 p. m. It has been found that approximately one day of treatment with 0.6 Gm. of thiouracil is required for each percentage of elevation in the basal metabolic rate. When the first patients receiving thiouracil underwent thyroidectomy the thyroid gland was found to be soft and friable, and bleeding of the entire operative site was so extensive that it was difficult to keep the field sufficiently dry to carry out the usual surgical technic. The friability of the thyroid gland was overcome when Lugol's solution was administered during the three week period immediately before operation. For two weeks the iodine and thiouracil were administered simultaneously, and during one week preoperatively the thiouracil was discontinued and only iodine administered. Toxic manifestations developed in 23 patients receiving thiouracil. The reactions consisted of granulocytopenia in 9 patients, fever reactions in 7, skin eruption in 4, sclerodema in 2 and swelling of the salivary glands in 1. Leukopenia with granulocytopenia is the most serious and alarming of all the reactions. Four patients developed the clinical picture of agranulocytic angina, 2 mild and 2 severe; 1 of the latter patients died. The occurrence of toxic reactions in 11 per cent of the patients indicates the necessity of careful observation during treatment.

War Medicine, Chicago

8:73-136 (Aug.) 1945

- Mechanics of Blast Injuries. M. W. Young.—p. 73.
 Physical Examination of Applicants for Commission: Observations and Impressions. J. W. Hall Jr. and F. K. Hlick.—p. 82.
 Narcosynthesis in Treatment of Noncombatant Psychiatric Casualty Overseas. M. F. Greiber.—p. 85.
 Mechanism of Wounding. E. N. Harvey, E. G. Butler, J. H. McMillen and W. O. Puckett.—p. 91.
 Incidence of Shigellas and Salmonellas Isolated from American Military Personnel in Egypt: Bacteriologic Analysis. B. Heinemann.—p. 105.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

4:71-86 (June) 1945

- Gold Treatment in Rheumatoid Arthritis. T. N. Fraser.—p. 71.
Effect of Penicillin on Rheumatoid Arthritis. E. W. Boland, N. E. Headley and P. S. Hench.—p. 76.
Investigation Into Etiology and Pathology of Fibrositis of Back. W. H. Mylechreest.—p. 77.
Some Orthopedic Aspects of Rheumatic Disease. A. G. Timbrell Fisher.—p. 80.
Rheumatic Fever in Malta: Clinical Note. R. E. Tunbridge and W. S. C. Copeman.—p. 85.

British Journal of Dermatology and Syphilis, London

57:125-168 (July-Aug.) 1945

- Consideration of Psychosomatic Factors in Etiology of Some Skin Diseases. G. A. Hodgson.—p. 125.
Linear Comedo Nevus and Ichthyosis: Case Report. F. Piers.—p. 138.
Acne and Sleep. E. L. Cohen.—p. 147.
Dermatitis Herpetiformis: Failure to Respond to Penicillin. R. G. Park.—p. 151.

Lancet, London

2:261-292 (Sept. 1) 1945

- Obscure Neuropathy in Middle East: Report of 112 Cases in Prisoners of War. J. D. Spillane and G. I. Scott.—p. 261.
*Gas Gangrene: Thirty-Three Cases, with One Death, Treated at Forward General Hospital in Italy. W. C. Gledhill.—p. 264.
Air Evacuation in Northwest European Campaign. K. D. Stewart.—p. 270.
*Sequelae of Cerebrospinal Meningitis: Analysis of 60 Cases. S. I. Ballard and H. G. Miller.—p. 273.
Starvation in Western Holland: 1945. G. C. E. Burger, H. R. Sandstead and J. Drummond.—p. 282.

Gas Gangrene.—Gledhill reviews observations on 33 cases of gas gangrene that were seen at a forward general hospital in Italy between September and November 1944. During the period under review 2,951 battle casualties were admitted to the hospital. Thus the incidence of gas gangrene was 11 per thousand. Three clinical types of gas gangrene were seen. Gas abscess, which was observed in 6 cases, was characterized by a swollen tense painful limb with localized edema and induration. On incision a gush of foul smelling pus and gas escaped from a cavity in which a foreign body was often lodged. Response to drainage and chemotherapy was rapid. In clostridial myositis, which was observed in 17 cases, extensive necrosis of muscle was always present with swelling, induration and frequently crepitation. Isolated muscle groups were rarely involved alone. More often there was a widespread infection of all the muscles along the track of the missile. There was severe general toxemia. The 10 cases of fulminating gas gangrene presented a picture of grave toxemia. The local signs were those of severe clostridial myositis with the viability of the limb often in doubt. The general condition varied from semicoma to muttering delirium. In the treatment of gas gangrene, early surgical removal of the source of toxemia is still the basis of treatment. Penicillin used prophylactically, both locally and parenterally, did not prevent the onset of gas gangrene. In treatment penicillin appears to be of extreme value. The usual dosage locally was a total of 17,600 Oxford units per tube. From 300,000 to 500,000 units was the average parenteral dose per case. Most patients were given a course of from 25 to 30 Gm. of sulfathiazole. A few had intravenous sulfadiazine or local sulfonamide powder. Every patient was given from 2 to 4 pints of whole blood and gas gangrene antiserum. The efficacy of the combined use of surgery, penicillin, sulfonamides, blood transfusion and serum was proved by the fact that only one death occurred among the 33 patients, and this occurred after the clostridial infection had been controlled.

Cerebrospinal Meningitis.—The material on which this study is based consists of 60 patients referred to a neuropsychiatric center after attacks of cerebrospinal meningitis; 53 showed symptoms, these being severe in 23, moderately severe in 23 and mild in 7. The duration of symptoms ranged from a week to two years, but most patients were seen from three to six months after the acute illness. In 34 of the 53 with residual symptoms the principal complaint was of headache,

in 7 lassitude, in 3 backache and in 3 "effort" symptoms. Ataxia, postural dizziness and depression overshadowed other complaints in 2 cases each. Although the severity of the acute disease is an important factor in determining the severity of the sequelae, there is a stronger positive correlation between the severity of sequelae and the degree of psychoneurotic predisposition. Of the 53 patients with symptoms 4, with very mild sequelae, were returned to duty without further treatment and 49 were treated in convalescent depot for about four weeks. Treatment consisted of psychotherapy and graduated exercises. Of the 49 so treated 45 were returned to duty and 4 invalided. The evidence suggests that the symptom complex should be regarded as a psychosomatic reaction. Suggestion plays a significant part in the production and perpetuation of the symptoms.

Presse Medicale, Paris

53:325-336 (June 16) 1945

- Surgical Treatment of Angina Pectoris. P. Wertheimer.—p. 325.
*Statistical Study of 70 Cases of Bronze Diabetes. R. Boulin.—p. 326.
Antivitamin K and Obliteration of Central Artery of the Retina. Y. Girault-Dangely.—p. 327.
Dicumarol, New Anticoagulant. A. P.—p. 328.

Bronze Diabetes.—During a period of fifteen years Boulin saw 70 cases (1.66 per cent) of bronze diabetes among 4,266 persons with diabetes mellitus. There were 59 men and 11 women. Familial pigmentation in the absence of cirrhosis or diabetes mellitus was present in 5 patients (7 per cent). Bronze diabetes differs considerably from diabetes mellitus. It is distinguished by its association with hepatopancreatic sclerosiderosis, by the absence of any hereditary characteristics and by the character of its glycogen-regulatory disturbances, which are as follows: In almost every case the severe diabetes associated with acidosis requires the administration of insulin. The diabetes is progressive and may require increased doses of insulin. Insulin resistance develops quickly and may be progressive. Hypoglycemic accidents resulting in death occurred in 25 of the 70 cases (35 per cent) in spite of the insulin resistance. Bronze diabetes is a disorder of long duration presenting various phases: melanoderma, followed by cirrhosis, which often is latent, and diabetes mellitus as the final and fatal phase of the disease. It may take ten years or even the greater part of the patient's lifetime for the condition to progress until all three conditions may be present at the same time. These findings support the concept of a congenital disorder of metabolism.

Helvetica Medica Acta, Basel

11:887-1010 (No. 7) 1944

- *Dystrophia Myotonica (Steinert's Disease): Importance of Cataract and Disturbances of Metabolism. Therapeutic Effects of Vitamin E. A. Franceschetti and R. S. Mach.—p. 887.
Splenectomy and Effects of Abolition of Splenic Function. J. de Puoz.—p. 927.
Osteodystrophy of Renal Origin: Systematic Study of Skeletons in 138 Cases of Renal Diseases. A. Berner.—p. 961.

Dystrophia Myotonica.—Franceschetti and Mach describe 3 personally observed cases of dystrophia myotonica and stress the importance of myotonic cataract in the differential diagnosis. In the atypical forms of Steinert's disease only the presence of a myotonic cataract permits a definite diagnosis. The biomicroscopic examination of the crystalline lens is indispensable for the differentiation of myotonic dystrophy from other myopathies and particularly from congenital myotonia. The appearance of a creatinuria after an aminoacetic acid tolerance test is of great diagnostic value in that, in progressive muscular atrophy, in congenital myotonia, in myasthenia gravis and in the muscular atrophies of the Charcot-Marie type, creatinuria is nearly always increased after the test, but neither spontaneous nor induced creatinuria is necessarily present in myotonic dystrophy. They observed the favorable effect of vitamin E in a patient with myotonic dystrophy as well as in a case of idiopathic muscular dystrophy (Erb's disease). The therapeutic effect of vitamin E on the muscular function is accompanied by improvement in the creatine metabolism. Myotonic dystrophy has a special place in that some of its symptoms indicate a lesion of endocrine glands while others indicate a nervous origin. It is possible that both of these factors are involved.

Book Notices

Government in Public Health. By Harry S. Mustard, B.S., M.D., LL.D., DeLamar Professor of Public Health Practice and Director, School of Public Health, Faculty of Medicine, Columbia University, New York. Studies of the New York Academy of Medicine, Committee on Medicine and the Changing Order. Cloth. Price, \$1.50. Pp. 219, with 3 illustrations. New York: Commonwealth Fund; London: Oxford University Press, 1945.

If civil government is to become a field for scientific inquiry and analysis with the result that public services for health may be carried out at local, state and federal levels on a rational and logical basis instead of by political, financial and in fact emotional opportunism it will be because there are students, practitioners and authors with the courage, imagination and sound philosophy of American citizenship shown by Dr. Mustard.

We can go far and fast with the new potencies of preventive medicine as a partner of civil government if our legislators and the elected officers of local and state governments will take to heart the problems and disabilities inherent in our triangle of authority and expenditures for the public health, so tersely presented by Dr. Mustard. Here we have history of past events, their successes and failures, coupled with current experience of the administrator, the student and the teacher, serving as a background on which a sounder foundation and a nobler structure of great social significance can be built.

This book, one of an important series, was written to inform the leaders in the practice and teaching of medicine of the scope of public health as it has been and may become. It is a clear and unbiased record of that revolution which the knowledge of human biology has demanded in the functions and organization of a society dominated by partisan politics. Of the six chapters the first and last are of special merit, giving as they do the necessary definitions, the philosophy and practical considerations at the beginning, and a summary of trends and discussion of certain needs to close the volume. Chapters two to four deal respectively with federal, state and local health services without fear or favor, and very much to the point for all workers in this field of science applied through government for social progress. The fifth chapter gives a description of the content of a public health program of today.

This book is full of material ready to hand for those who would wish to influence public policy and performance, the promoters, salesmen and disciples of public health. No student or teacher of public health, the general field of medical administration or preventive medicine at the medical school or post-graduate level can afford to go without this book, and we may hope that the public health committee of each county and state medical society will read and accept the good sense so pleasingly set before us. The reviewer is particularly delighted with the unequivocal condemnation of the present position of the Children's Bureau in our federal health structure.

For immediate adoption as a social philosophy let us remember these two sentences: "At present local governments choose whether or not they will organize effective local health service. The time has come to follow precedent and make the provision of effective local health service a requirement." The literary and historical student will be especially intrigued by the quaint texts of the original documents quoted as a frontispiece and in the appendix. The book in form as well as in content is to be cordially recommended to physicians, nurses and administrators of official and voluntary health agencies.

New and Nonofficial Remedies, 1945: Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1945. Issued Under the Direction and Supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Cloth. Price, \$1.50. Pp. 760. Chicago: American Medical Association, 1945.

The successive volumes of *New and Nonofficial Remedies* represent an invaluable service to their profession by a distinguished group of scientists, the Council on Pharmacy and Chemistry. Through the years the membership of this body has changed, but its freely given and impartial devotion to the best interests of rational, scientific therapy is unchanging. In this volume the physician may find the best and most useful of the newer pharmaceutical agents. If a new or not yet official drug is not here described, the physician should hesitate to use

it without finding out why it does not appear. If the agent was formerly described in the book and does not appear, the Council considers that it has not fulfilled its promise of usefulness. Fifteen or twenty newly accepted preparations appear. A large number of preparations have been omitted, mainly brands of official preparations. The general statements concerning these pharmacopoeial preparations have been retained for the information of physicians.

As stated in the preface, the entire book has been scanned to bring it up to date with the latest medical knowledge. It is noted that the section "Articles and Brands Accepted by the Council But Not Described in N. N. R.," a remnant of which appeared in the 1944 volume, has now entirely disappeared. Many of the official preparations have been transferred to the body of the book and the others deleted. Much medical information is contained in this volume; certainly no other compendium of comparable price contains so much.

Nitrous Oxide-Oxygen Anesthesia: McKesson-Clement Viewpoint and Technique. By F. W. Clement, Major M. C. (A. U. S.). Second edition. Cloth. Price, \$4.50. Pp. 238, with 92 illustrations. Philadelphia: Lea & Febiger, 1945.

In the second edition of this book the author has made changes in detail rather than any alterations of the original text. As far as fundamental principles are concerned the story is again one of personal experience and technic employed by the author and his late associate Dr. E. I. McKesson, together with certain suggestions that have been sent to him by some of his friends. He has attempted to cover briefly the history and theory of anesthesia and has tried to present the physiologic aspects of the situations confronting the anesthetist who applies nitrous oxide and oxygen to various types of patients under various conditions. The author has had a wide experience both in civilian practice and in army hospitals. Possession of this book is of considerable value to the general anesthetist, as it brings him into direct line with the latest points of view of the author, who is one of the most skilled administrators of nitrous oxide and oxygen.

Endurance of Young Men: Analysis of Endurance Exercises and Methods of Evaluating Motor Fitness. By Thomas Kirk Cureton, Warren J. Huffman, Lyle Welsler, Ramon W. Kirells and Darrell E. Latham. Monographs of the Society for Research in Child Development, Volume X, No. 1 (Serial No. 40). Paper. Price, \$2.50. Pp. 284, with illustrations. Washington, D. C.: Society for Research in Child Development, National Research Council, 1945.

The Society for Research in Child Development associated with the National Research Council has made available a report which represents a two year study made by five members of the University of Illinois School of Physical Education. Three thousand men were tested on twenty-eight endurance exercises, and some of them were tested with organic condition tests. According to this report the step test devised by the Harvard Fatigue Laboratory is a poor exercise for measuring all round athletic endurance. The Army and Navy have used excellent testing events, such as chinning the bar, push ups and the 300 yard shuttle run. According to these studies the mile run is shown to be of the greatest all round value in measuring all the constituents of endurance.

Scientific Societies in the United States. By Ralph S. Bates, Ph.D. A Publication of the Technology Press. Massachusetts Institute of Technology. Cloth. Price, \$3.50. Pp. 246. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Ltd., 1945.

The contribution of scientific societies to the advancement of knowledge is one of the finest exemplifications of democracy at work. Much of the intensified progress in science during the war was brought about by scientific organization in which our scientific societies played a conspicuous part. The volume by Dr. Bates considers the subject chronologically, moving from the earliest societies in eighteenth century America to the triumph of specialization in the period between 1866 and 1918 and considering finally the growth of science up to 1944. This was the period during which American societies effected their international relationships—a period which will perhaps culminate in the formation of special sections of the organization of the United Nations devoted to health and science. A final chapter concerns the increase and diffusion of knowledge by means of the scientific societies. An extensive, well arranged bibliography and a fine index complete the work.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

X-RAY OF THYMUS PRIOR TO TONSILLECTOMY

To the Editor:—I have the thymus glands of all children 7 years old and younger x-rayed prior to tonsillectomy. Will you kindly inform me if this precaution is necessary?
W. O. Bailey, M.D., Warrenton, Va.

ANSWER.—The caution displayed by the writer is commendable; it is, in fact, displayed by many practitioners in the country if not quite so directly. For instance, children who are under the care of pediatricians and who have their tonsils removed by these pediatricians or who have been referred by them to others for operation are presumed to have had fluoroscopies of the chest on a number of preceding occasions, if not with direct reference to the tonsillectomy or other operation. As to the rationale of this examination, the following may summarize good current opinion: Status thymicolymphaticus is a condition characterized by generalized lymphoid hypertrophy and hypoplasia of the cardiovascular system. The thymus gland may or may not be hypertrophied in this condition. The thymicolymphatic state is a condition which many people think is an adequate explanation for easy death under a variety of circumstances. The presence, however, of an enlarged thymus gland does not mean that the patient suffers from status thymicolymphaticus; its discovery should lead to a search for the other conditions mentioned and its absence does not mean that they may not be present.

In general, then, this means that a special fluoroscopy for the presence of an enlarged thymus gland is not a protection against the sudden and mysterious death said to be associated with status thymicolymphaticus but does mean on the other hand that every patient who submits himself to a surgical procedure of any degree should have a complete physical examination with note made of all important physical observations, including the presence or absence of the thymicolymphatic state.

OXALIC ACID FOR HEMORRHAGE

To the Editor:—Please give information on the use of oxalic acid for hemorrhage. To what extent has it been used and what results have been obtained? Have any ill effects so far been observed in its use?

Jay G. Roberts, M.D., Pomona, Calif.

ANSWER.—The effect of oxalic acid in the control of hemorrhage is still in the experimental stage, and conclusions must await more extensive studies than have yet appeared. Herbst and Weinstein found that there was a decrease in the bleeding and coagulation times thirty minutes after injection of an oxalic acid compound and that this continues in most cases for about an hour and a half after the injection. The prothrombin time does not appear to be significantly affected, which suggests that the action of oxalic acid is on the late phase of the clotting mechanism of the blood. Although some studies with the substance have been encouraging, routine use of the drug for the control of hemorrhage is not yet recommended.

References:

- Blain, A. W., and Campbell, K. N.: The Hemostatic Effect of Oxalic Acid, *Arch. Surg.* 44: 1117 (June) 1942.
Steinberg, A.; Segal, H. I., and Parris, H. M.: The Role of Oxalic Acid and Certain Related Dicarboxylic Acids in the Treatment and Control of Hemorrhage, *Ann. Otol., Rhin. & Laryng.* 49: 1008 (Dec.) 1940.
Herbst, W. P., and Weinstein, J. J.: Observations on the Action of Koagamin, *J. Urol.* 51: 325 (March) 1944.

THIOURACIL AND THE NORMAL THYROID GLAND

To the Editor:—What is the effect of thiouracil on the normal human thyroid gland?
M.D., Florida.

ANSWER.—Adequate data are not available on this point, but the effect is presumably the same as on the thyroid gland of normal animals. In various experimental animals it produces hyperplasia and enlargement of the thyroid, with a reduction in basal metabolism to a myxedematous level. The most plausible explanation is that thiouracil interferes in some way with availability of iodine for the formation of the thyroid hormone. The thyroid gland responds to this artificial iodine deficiency by hyperplasia.

PENICILLIN IN SYPHILIS DURING PREGNANCY

To the Editor:—A white woman aged 45, pregnant two months, has positive Kahn and Wassermann reactions. Both she and her husband are known to have had syphilis for about five years. She has a daughter aged 18. A year and a half ago she gave birth in the eighth month of pregnancy to a 4 pound baby, which survived and is now apparently normal. Repeated serologic tests for syphilis have been negative in the children. Prior to the first pregnancy she had received some but inadequate antisyphilitic treatment; during the last pregnancy she received intensive therapy with both arsenic and bismuth compounds. About two days prior to delivery she first noted a beginning jaundice but did not report this to her physician. Her delivery was uneventful, but two days later she had an acute cardiac dilatation with pulmonary effusion. Finally after over a month of hospitalization, during which on several occasions it was felt that she was dying, she made a fairly good recovery; she is still taking digitalis. Because of religious reasons she has refused a therapeutic abortion. I am interested in the use of penicillin and would like an outline as to the dosage and method of use in this case; I feel that because of the previous liver damage and heart condition it would be dangerous to use arsenic in this instance. Has penicillin been used in syphilis during pregnancy? Has it been successful in preventing syphilitic children?

Lieutenant, M. C., A. U. S.

ANSWER.—There is insufficient experience recorded in the medical literature, or indeed available from any source, to give a satisfactory answer to the exact question raised. A patient like that described must be considered to have late syphilis, partially treated. It is not clear whether the cardiovascular disease and liver damage results from syphilis, from a combination of syphilis and treatment or from some other cause, and it is presumed that this might be difficult to determine with certainty. If the cardiovascular or liver damage is the result of active syphilis, then most authorities working in this field would consider penicillin as it is ordinarily employed in the treatment of syphilis contraindicated for fear of therapeutic shock and therapeutic paradox which might result in additional damage to the heart or liver.

The trial of treatment of the syphilitic pregnant woman to insure the birth of a healthy infant has been confined largely to symptomatic early (with primary or secondary lesions) or to early latent (disease definitely known to have existed for less than four years) infection. The results of the use of penicillin for this type of patient have been uniformly good (Lentz, J. W.; Ingraham, N. R., Jr.; Beerman, Herman, and Stokes, J. H.: Penicillin in the Prevention and Treatment of Congenital Syphilis, *THE JOURNAL*, Oct. 14, 1944, p. 408). Only 1 infant has been shown to be infected thus far when treatment of the mother has been reasonably adequate, although individual series of cases observed are small, numbering less than 50.

Sodium penicillin intramuscularly, dissolved in distilled water or isotonic solution of sodium chloride, has been used in total dosage of either 1.2 million or 2.4 million Oxford units. It is preferable to give somewhat reduced dosage for the first fifty-eight to seventy-two hours.

Thus, if the latter system is used (i. e. 2.4 million Oxford units total dosage) a schedule which has been successfully used consists in giving 10,000 Oxford units every three hours for the first twenty-four hours, provided the drug is well tolerated, continuing with 20,000 Oxford units every three hours for the second twenty-four hours and finally with 40,000 Oxford units every three hours until the total dosage of 2.4 million Oxford units is reached. This will require from eight to nine days. The patient should be hospitalized during the course of therapy. While such treatment is well tolerated by the average person, it is to be emphasized that it has not received adequate trial in a patient such as is described.

FATTY TISSUE IN SKIN GRAFT

To the Editor:—Some months ago a man was treated for avulsion of the skin of the dorsum of the left hand by placing the hand in a pocket in the of the dorsum of the abdomen, thus providing the bare area with a subcutaneous tissue of the abdomen, and subcutaneous tissue. Following the release covering of normal skin and subcutaneous tissue. Following the release covering of normal skin and subcutaneous tissue, which now serves as a full of the hand and the skin of the abdomen, the patient gained a moderate thickness graft over the dorsum of the hand, the patient gained a moderate amount of weight and there has been an increasing deposit of adipose tissue beneath this skin, rendering flexion of the remaining fingers somewhat limited as the result of this increase in subcutaneous tissue. Is it what limited as the result of this increase in subcutaneous tissue, and will such procedure result in permanent relief of this disturbance? Will subsequent weight gain be reflected in a similar manner?
M.D., Illinois.

ANSWER.—The excess tissue could be largely eliminated by raising two thirds of the flap, cutting the fat entirely away from the hand and as close as possible to the skin (the subcutaneous blood supply is usually good in conditions as described), allow that to heal in place for three weeks, then raise half or two thirds of the way across from the other side and repeat the procedure. If sufficient of the fat-bearing fascia is removed at the operation, the anatomic structure in which fat is stored up will be permanently eliminated.

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THE PETIT MAL EPILEPSIES

THEIR TREATMENT WITH TRIDIONE

WILLIAM G. LENNOX, M.D.

BOSTON

The specific relationship of age to the seizures of epilepsy has been inadequately set forth. Seizures of course may begin at any age between birth and senility, but the incidence of various types of seizures and of various patterns of electroencephalographic seizure discharges is different in children and in adults. A comparison of the clinical and the electroencephalographic diagnoses in 530 children and in 730 adults is calculated from data collected by the Gibbses and Lennox¹ and is shown graphically in figure 1. Forty-two per cent of this group of 1,260 epileptic patients were less than 20 years of age. Yet, of those having only petit mal, 84 per cent were under 20 years. Of those whose electroencephalograms were of the two per second spike and wave pattern (petit mal variant), 80 per cent were under 20 years, and of those with the three per second dart and dome formation (petit mal) 65 per cent were not yet adult. Tabulation based on the age of the patient when seizures began would be even more specific. I remember no case in which petit mal (pyknolepsy) began after the twentieth year. Inspection of this figure makes clear the fact that seizures associated with an alternate spike and slow smooth wave of the electroencephalogram are predominantly seizures of childhood or puberty which tend to disappear as the person becomes adult. A more detailed chart illustrating this point graphically is presented in the article mentioned.¹

The electroencephalographic classification of alternate spike and wave brings together a triad of seizures having diverse clinical manifestations. The first (petit mal) is a transient lapse of consciousness, the second (myoclonic epilepsy) a single quick contraction of muscles and the third (akinetic epilepsy) a sudden loss of postural control. In spite of this disparity in appearance, these three types of seizures have a number of characteristics in common: great frequency, brevity of attacks, abrupt onset and termination, maintenance of mentality, sensitivity to changes in the acid-base balance or in the concentration of oxygen or of sugar in the blood, a strong tendency to spontaneous recovery with age and, except in some akinetic cases, absence

of evidence of cerebral pathologic change and, finally, resistance to ordinary anticonvulsant drug therapy but relief from a new preparation to be described presently. These three types of seizure may occur alone or together or perhaps in combination with grand mal or psychomotor seizures. Each will be described.

PETIT MAL (PYKNOEPILEPSY)

Definition of the petit mal form of seizure is important. Many, probably most, doctors define petit mal as a small or mild seizure of any sort. This conception is illogical and when used in drug therapy may lead to embarrassing failure. Disease classification is based on difference in kind and not on difference in degree—a mild case of typhoid is just that and not something with another name. Although the clinician who originally used the terms grand mal and petit mal may have thought only of size, we now know that the three main manifestations of epilepsy—convulsions (grand mal), periods of amnesia (psychomotor) and transient lapses of consciousness (petit mal)—are distinct also as regards drug therapy.² The term pyknolepsy is preferable to pyknolepsy because this form of seizure is not, like narcolepsy, something different from epilepsy. It is epilepsy in its purest form.

Petit mal, pyknolepsy or dart and dome dysrhythmia, whichever term is preferred; consists of a lapse of consciousness lasting from five to thirty seconds of time. The person is usually immobile, and muscular movements, if any, are confined to rhythmic jerking or twitching at the rate of three per second of the eyelids or brow and, rarely, of the head and arms. These temporary "blackouts" recur usually every day, from five to scores of times a day. There is no aura or after-symptom. Seizures begin and end abruptly. Rarely, however, the child may be in a state of confusion lasting for hours which the electroencephalograph proves is a petit mal status. If there is any rigidity of muscles, if the person does automatic purposeless things or if he mumbles, groans or makes chewing motions the attack is probably a short psychomotor seizure and not a petit mal. Involuntary muscle movements, if present, are clonic in petit mal and tonic in psychomotor seizures.

Petit mal seizures are more likely to occur in the minutes or hours after rising; they may be precipitated by emotion, excitement or in females by menstruation and are much less frequent during physical or mental activity. Girls are more often affected than boys. Mentality is not impaired even by scores of thousands of seizures. In fact, patients with pure petit mal seem

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² 1. Gibbs, Frederic A.; Gibbs, Erna L., and Lennox, W. G.: Electroencephalographic Classification of Epileptic Patients and Control Subjects, Arch. Neurol. & Psychiat. 50: 111 (Aug.) 1945.

2. Gibbs, F. A.; Gibbs, Erna L., and Lennox, W. G.: Epilepsy: A Paroxysmal Cerebral Dysrhythmia, Brain 60: 377 (Dec.) 1937; Cerebral Dysrhythmias of Epilepsy: Measures for Their Control, Arch. Neurol. & Psychiat. 39: 298 (Feb.) 1938; Influence of the Blood Sugar Level on the Wave and Spike Formation in Petit Mal Epilepsy, ibid. 41: 1111 (June) 1939. Lennox.¹²

unusually bright. I have made intelligence tests routinely of private patients. In a group of 33 patients who had experienced an average of nearly 30,000 petit mal and 30 grand mal seizures the majority had Wechsler Bellevue scores of from 120 to 139, which classified them as intellectually superior or very superior.

If a child gives a history of daily petit mal, seizures can usually be precipitated for inspection by having

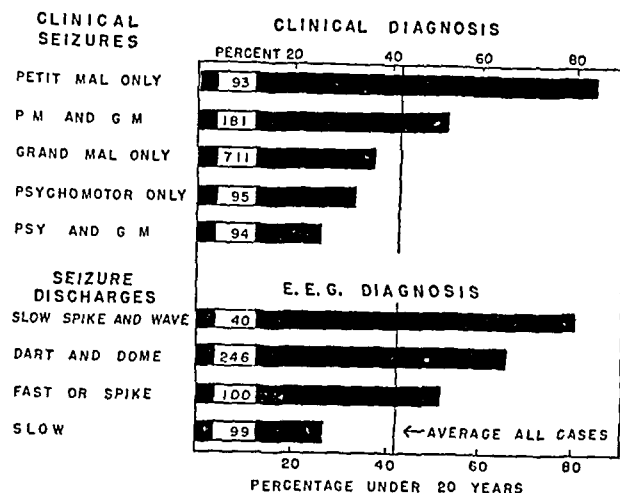


Fig. 1.—The proportion of various types of seizures and of electroencephalographic seizure discharges which occur in patients under 20 years of age. The figures at the base of the column refer to the number of patients in the group. The length of the columns corresponds with the percentage of each group who are under 20 years. Thus, of the 93 patients who had a history of having petit mal only, 84 per cent were less than 20. Percentage figures represented by the length of columns from the top down, are 84, 53, 37, 33, 26 and 80, 65, 52, 27. Data dealing with the clinical classification of seizures and with electroencephalographic records are taken from the same group but only the classification are shown.

him overventilate his lungs, which causes alkalosis and thereby increases instability of the cortical potentials. In 82 per cent of patients with a history of petit mal, the characteristic three per second alternate dart and dome formation, first described by Davis, Gibbs and Lennox,³ is present on an electroencephalographic examination which includes a short period of hyperpnea¹ (fig. 2). Typical petit mal discharges may occur without coincident clinical symptoms, subjective or objective, but in such cases the subclinical seizure discharge is short, from one to four seconds long, or is discontinuous and may not appear simultaneously in all leads. This alternate dart and dome formation is sensitive to chemical changes in the blood passing through the brain. Discharges are made more numerous by alkalosis, hypoglycemia or hypoxemia and are suppressed by the opposite conditions.

MYOCLONIC EPILEPSY

Myoclonic shocks or jerks are single contractions of the flexor muscles, usually involving one or both arms but sometimes muscles of the trunk as well. There is no detectable loss of consciousness. These are similar to the muscular jerks which many healthy persons experience on falling asleep. Myoclonic jerks most often occur in patients subject to petit mal, although they may form the aura of grand mal. Occurrence in the absence of a history of some other form of seizure is extremely rare. Like petit mal, they are most frequent in the morning hours. Except for the embarrassment of a

sudden unexplainable movement, the seizure is innocuous. Myoclonic epilepsy is not to be confused with the extremely serious myoclonus epilepsy. Much of the book by Muskens⁴ is devoted to this subject.

If an electroencephalogram is made at the time of a myoclonic shock, a single dart and dome may appear coincidentally on the record (fig. 3). If it is absent the electrical discharge presumably is confined to subcortical areas of the brain or to the spinal cord.

AKINETIC EPILEPSY

Akinetic ("lack of motion") seizures were called "static" by Ramsey Hunt⁵ and are rarely encountered in adults. They consist of a sudden loss of postural control, with nodding of the head or, if generalized, a sudden fall. Without any warning, and without coincident muscular jerk, the child collapses. Usually he gets up immediately but may lie limp and unconscious for several minutes. The momentary attacks, like petit mal, may occur dozens or even hundreds of times during the day. Except for the lack of an emotional excitant, the phenomenon resembles the cataplectic attacks which accompany narcolepsy.

Various circumstances make akinetic epilepsy more confusing and less hopeful than petit mal or myoclonic epilepsy. As in cataplexy, there may be a history of encephalitis, or there may have been birth injury or asphyxia also suggesting a midbrain lesion. The electroencephalogram made when the patient is without symptoms may contain a plethora of abnormalities; long runs of smooth, evenly spaced three per second waves without spikes, bursts of discontinuous or atypical three per second petit mal formations and two per second petit mal variant formations occurring singly or in series or as a focus of malactivity in one lead only, or there may be a mixture of these dysrhythmias appearing at intervals in a normal appearing record (fig. 4).

SIGNIFICANCE OF THE SPIKE AND WAVE PATTERN

The spike and wave is the only pattern appearing in a routine testing which is distinctive for epilepsy. However, there is a vast difference between the three per second dart and dome (petit mal) and the two

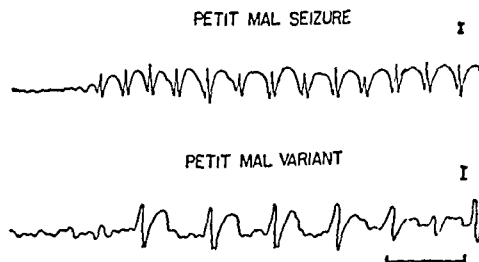


Fig. 2.—Samples of the petit mal and petit mal variant type of dysrhythmia. At the left of each tracing is the patient's normal rhythm. The upper tracing taken during a petit mal seizure is of very high voltage (the signal at the right marks 200 microvolts) and consists of an alternate dart and dome recurring two and one-half times per second. The lower tracing, taken when the patient appeared to be normal, contains a spike and wave recurring one and one-half times per second, the signal at the right marks 50 microvolts. The horizontal line at the bottom measures one second.

per second blunt spike and wave (petit mal variant) formations (fig. 2). The petit mal type of discharge is most common in essential (genetic) epilepsy. The dysrhythmia usually appears simultaneously in all leads

3. Gibbs, F. A.; Davis, H., and Lennox, W. G. The Electroencephalogram in Epilepsy and in Conditions of Impaired Consciousness, *Arch Neurol & Psychiat* 34:1133 (Dec) 1935.

4. Muskens, L. J. J. Epilepsy: Comparative Pathogenesis, Symptoms, Treatment, New York, William Wood & Co., 1928.
5. Hunt, J. R. On the Occurrence of Static Seizures in Epilepsy, *J Nerv & Ment Dis* 56:351 (Oct) 1922

and coincides accurately with any period of unconsciousness, and the spikes with any clonic movement. The appearance of the pattern possesses individuality for each patient. Petit mal discharges, no matter how numerous, carry a good prognosis for recovery and maintenance of mentality. They are easily affected by certain alterations in the chemistry of the circulatory blood.

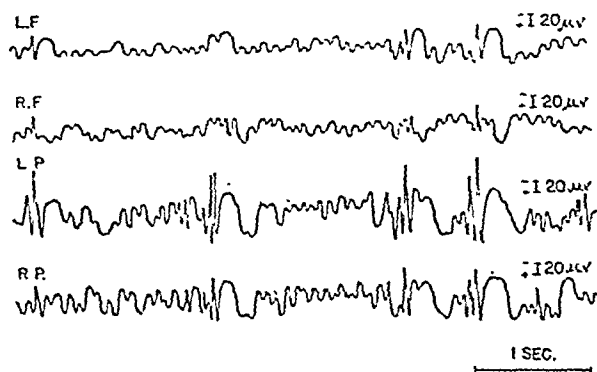


Fig. 3.—Sample of the electroencephalogram of a patient having frequent myoclonic shocks. The dart and dome formation and the muscular jerks were synchronous, although jerks were not always accompanied by disturbance of cortical potentials. In this patient the disturbance was maximal in the left parietal area. Intravenous injection of 0.5 Gm. of caffeine with sodium salicylate was followed by the disappearance of both jerks and dysrhythmia. The signal at the right marks 20 microvolts and the line at the bottom one second.

In contrast, the petit mal variant type of discharge, which occurs only one sixth as frequently, most often occurs in brain injured (symptomatic or acquired) epilepsy; it is often focal; accompanying symptoms may be absent or only a mild confusion. The prognosis, perhaps because of associated pathologic changes, is generally poor for both recovery and mentality and the discharges are little affected by changes in blood chemistry.

TREATMENT

The treatment of this triad of phenomena, in contrast with the grand mal or psychomotor seizures, has been notoriously ineffective. Fortunately the healing forces of nature usually bring spontaneous cure, at least of petit mal and myoclonic epilepsy, but this distant prospect is of no great comfort to parents who find the educational and social progress of children blocked by attacks which recur many times a day every day. Fortunately a new medicine, 3,5,5-trimethyloxazolidine-2,4-dione, promises relief to many of these patients.

The following therapeutic agents have been used for petit mal with varying, but usually disappointing, results:

Acidosis, however induced, tends to inhibit the three per second dart and dome dysrhythmia and the accompanying petit mal or myoclonic seizures. A relative acidosis is most easily and cheaply induced by activity of muscles and of the brain. Petit mal seizures are relatively frequent during periods when body and brain are idle.

Ketosis, produced by means of a ketogenic diet, has been of distinct benefit to a minority of patients with petit mal, though if attacks are frequent freedom may be short lived. The unpleasantness of the diet and the labor involved have interfered with its wider use. Why certain patients should be free of petit mal with ketosis and others in no way affected is unexplained.

Diphenylhydantoin (phenytoin) sodium, in contrast with the dramatic effect on psychomotor and grand mal convulsions, often increases the frequency of petit mal. The evidence in the literature is clouded because of the fact that many authors confuse brief psychomotor seizures with petit mal.

Phenobarbital is sometimes of temporary or partial assistance in control of petit mal, but in developed cases such control may last only a few days or weeks. A third of one group of patients was seizure free after phenobarbital narcosis maintained for ten days. However, subclinical seizure discharges remained.⁶

Mebaral (methyl ethyl phenobarbital) in my experience has been rather more effective than phenobarbital, but here again benefit is usually only partial or short lived.

Amphetamine (benzedrine), or Dexedrine sulfate, combined in most cases with phenobarbital, stopped the petit mal in 17 of a group of 33 uncomplicated cases.⁷

Glutamic acid has received more attention in popular than in medical journals. The one medical report details improvement in 6 patients whose regular therapy was supplemented by from 12 to 20 Gm. of glutamic acid.⁸

Caffeine used alone for petit mal has not, I believe, been previously reported. One of our adult patients with incapacitating frequency of myoclonic shocks ascertained for himself that he could secure relief only by drinking from five to ten cups of coffee daily. We corroborated this by observing that the frequent spike and wave discharges of the electroencephalogram disappeared during and after the intravenous injection of 0.5 Gm. of caffeine with sodium benzoate. Caffeine either in tablets or as coffee given to a number of patients with petit mal has somewhat ameliorated the frequency of attacks in about one half; others have not been helped or have experienced insomnia or increased nervousness, which precluded continued use. In 1 adult patient having from ten to one hundred petit mal seizures daily, not

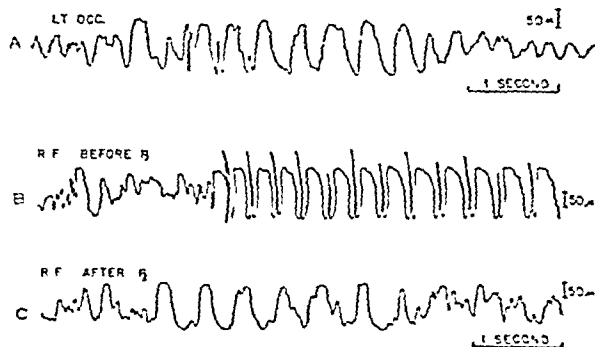
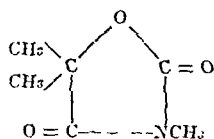


Fig. 4.—The uppermost tracing, A, is a sample of the electroencephalogram of patient L. B. Her very frequent myoclonic and aknetic seizures had been absent for several months on Tridione therapy, yet this peculiar seizure discharge, several dart and dome formations, preceded and followed by a short series of high voltage slow waves, recurred every ten to twenty seconds. The lower two tracings are of patient J. S. The upper tracing, B, taken before Tridione therapy was begun, is the beginning of a clinical petit mal seizure which occurred after fifteen deep breaths. The bottom tracing, C, taken three months after seizures ceased, showed only high voltage slow waves after twenty deep breaths.

influenced by ketosis or by any of the many drugs tried, caffeine was apparently influential in terminating attacks, absent now for nearly a year.

Tridione, in my experience, has been the most dramatic in its effect of any form of therapy attempted. The drug is 3,5,5-trimethylxazolidine-2,4-dione⁹ and is not as yet on the market. The structural formula is as follows:



Everett and Richards found the compound more effective than diphenylhydantoin or phenobarbital in controlling convulsions induced in animals.¹⁰ Richards and Perlstein¹¹ have used it in athetosis and in various forms of epilepsy. I have made a preliminary report of a group of patients with petit mal.¹² The medicine is dispensed in capsules each containing 0.32 Gm. (5 grains). Doses used varied from 1.0 to 2.0 Gm. (15 to 30 grains) a day without much regard for age.

During the past fifteen months I have given the drug to 120 patients, both children and adults. Attention has been concentrated on patients whose seizures were predominantly petit mal, myoclonic or akinetic. The fact that seizures in these patients occurred many times every day permits a quicker judgment of results than with other types of seizures which may recur at intervals of weeks or months.

RESULTS

A detailed record of results will be presented elsewhere, but observations to date justify a general statement together with a few case histories. Because of the fact that these three types of epilepsy often disappear spontaneously, results of treatment must be judged more critically than with other forms of seizures. However, there is nothing in the literature of epilepsy which would prepare one for an abrupt decrease or wiping out of these seizures in a period of days or weeks. Even more surprising, in view of our experience with other anticonvulsants, would be the failure of seizures to return promptly when the medicine is discontinued.

Fifty patients each having many daily seizures, either petit mal, myoclonic or akinetic, have been under treatment with Tridione for from two to fifteen months. In a group of 40 patients 10 had a history of grand mal also, but these had been few and were of minor importance. Twenty-eight of the 40 patients had petit mal only. Six had myoclonic or akinetic seizures in addition, and 6 had one or both of these types without petit mal. All but 4 of the patients were less than 20 years of age. The duration of the illness was from one to eighteen years. Seizures recurred from several to scores of times daily, with remissions of no more than a few days. The total number of seizures experienced by individuals ranged from approximately 200 to something like 200,000. Electroencephalograms of all patients contained spike and wave discharges. Practically all of the group had been given the usual anticonvulsant drugs without important benefit. The Tridione was substituted for whatever drugs were being used. In no case was the transfer accompanied by an increase of petit mal.

9. Made available by the pharmacology division of the Abbott Laboratories, North Chicago, Ill.

10. Everett, G. M., and Richards, R. K.: Comparative Anticonvulsive Action of 3,5,5-Trimethylxazolidine-2,4-Dione (Tridione), *Dilantin* and Phenobarbital, *J. Pharmacol. & Exper. Therap.* 81: 402 (Aug.) 1944.

11. Richards, R. K., and Perlstein, M. A.: Tridione: A New Experimental Drug for the Treatment of Convulsive and Related Disorders, *Arch. Neurol. & Psychiat.*, to be published.

12. Lennox, W. G.: The Treatment of Epilepsy, *M. Clin. North America*, September 1945.

Of this group of 40 patients 11 (28 per cent) now are free from petit mal, myoclonic or akinetic seizures and 21 (52 per cent) have experienced a 75 per cent or greater reduction in the number of seizures from the previous level. Ten (20 per cent) were helped only moderately. None failed to experience some amelioration of seizures. Therapy was discontinued in 2 cases because of toxic symptoms and in 2 others as a trial of results. Three of these have had no return of symptoms in the two to four months which have lapsed. Remissions of such duration were entirely unexpected in the light of experience with grand mal or psychomotor seizures, which recur promptly if medication is not continued for many months after seizures have ceased. Evidently petit mal seizures have a hair trigger mechanism which can be blocked relatively easily if the proper agent is used. The maximum reduction in seizures in most cases occurred in from one to three weeks. In several cases there might remain a small residuum which continued in spite of increased dosage or which disappeared after two or three months.

A second group of 10 patients, in addition to frequent daily petit mal seizures, experienced frequent grand mal seizures. Results with this group were encouraging as regards disposal of petit mal but disappointing as regards grand mal. In each instance petit mal seizures ceased or were decidedly lessened. However, the dose of Tridione which proved effective against petit mal was without influence against grand mal. Indeed, some of these patients had an unwonted number of major seizures, due possibly to stopping other medication, and in none of this group was medication continued. Diphenylhydantoin sodium oftentimes increases the frequency of petit mal. Whether Tridione can profitably be combined with diphenylhydantoin or phenobarbital in the treatment of patients who, in addition to one of the petit mal triad are having frequent or persistent grand mal seizures, requires further experience. Certainly, patients having petit mal, myoclonic or akinetic seizures as their major problem are the most likely to benefit from this new medicine. My observations do not warrant statement regarding the effect of Tridione on patients having grand mal or psychomotor seizures not complicated by petit mal. In addition to the 50 patients 13, because of side effects or an immediate increase of seizures, did not continue medication the required two months.

The following cases are representative of the results observed:

N. Y., a girl aged 17 years, with an intelligence quotient of 138, began to have petit mal seizures six and one-half years ago. They recurred frequently, often scores of times a day. Phenobarbital and diphenylhydantoin sodium were without effect; glutamic acid was of transient benefit; mebaral gave freedom for three weeks, and caffeine for a shorter period. Tridione was begun July 1, 1944. By the end of two months a petit mal seizure was observed only about once a week. After another four months the seizures had disappeared and have been absent for seven months, during the last four of which Tridione has not been used. Electroencephalograms before treatment always contained several larval petit mal discharges and a prolonged petit mal with overventilation. Six months after cessation of seizures there was only a high voltage slow wave discharge with hyperpnea.

L. B., a girl aged 3½ years, born after prolonged labor and version, progressed normally till 15 months, when she began to have several rhythmic jerks of the legs whenever she fell, or her eyelids would blink rhythmically at a loud noise. A month before she was seen she began to fall frequently without reason. On phenobarbital these symptoms were absent for three days and then came more frequently, until they recurred from

fifty to two hundred times a day. Twenty-four hours after Tridione was first given (1.0 Gm. a day) attacks ceased for two months. They then began to return. Medication was increased to 1.3 Gm. a day. In the four months which have intervened akinetic seizures have been absent, the mentality, which is retarded, has improved a bit and behavior is better. In spite of the clinical improvement the electrocardiogram continues to have frequent discharges of high voltage three per second waves with occasional spikes interspersed (uppermost tracing of figure 4).

J. S., a boy aged 11 years, with an intelligence quotient of 136, had falling episodes at 3 years and at 5 years began to have petit mal seizures with increasing frequency up to twenty to thirty a day. Enuresis occurred with some. During the past six months he had occasional days of being confused, when he was able to eat but not to converse, i. e. periods of petit mal status. There had been six grand mal seizures. Phenobarbital, mebaral, diphenylhydantoin sodium, amphetamine and caffeine had been used without more than transitory benefit. Tridione, starting with 1.0 Gm. daily, was increased to 2.0 Gm. Petit mal seizures had disappeared in two months and have been absent for eight months, the last six of these without medication. Before treatment electroencephalograms yielded symptomatic petit mal both spontaneous and after overventilation and also a shifting focus of single dart and dome discharges. Five months after cessation of attacks the record yielded no discharges (two lower tracings of figure 4).

G. W., a girl aged 9 years, with an intelligence quotient of 130, had ten to twenty petit mal seizures daily for eighteen months without interference from phenobarbital or mebaral. The electroencephalogram contained two eight second periods of petit mal discharges and many single high voltage three per second waves. Petit mal seizures ceased about ten days after medication was begun and did not reappear during a severe attack of measles. An electroencephalogram made after three months of freedom was essentially normal. Behavior also was much improved.

W. McN., a boy aged 10 years, had had petit mal seizures ten to thirty times daily, accompanied by coarse clonic movements of the arms for three and one-half years. Seizures were easily precipitated by overventilation. Phenobarbital, diphenylhydantoin sodium and glutamic acid were without effect. Petit mal seizures ceased several weeks after Tridione therapy was commenced, but five days later medicine was stopped because of vomiting. Seizures were entirely absent for four months, then returned with their former frequency but without the accompanying clonic movements. Medication was resumed, and attacks again ceased after several weeks.

G. W., a boy aged 12 years, with an intelligence quotient of 112, had occasional grand mal seizures, held in check by diphenylhydantoin sodium, and myoclonic jerks evidenced by a single sharp cry. These recurred several times a day and had not been helped by phenobarbital or diphenylhydantoin sodium. His electroencephalogram contained a few single wave and spike discharges. For three months after starting Tridione he did not have a single cry, but grand mal seizures returned and became more frequent in spite of phenobarbital medication. For this reason Tridione was stopped and diphenylhydantoin reinstituted.

These encouraging and dramatic results are only the immediate results of therapy. Time must tell the long term effects, either of therapeutic results or of side-effects. We hope for the disappearance not only of clinical symptoms but also of the underlying dysrhythmias. On this point observations to date are encouraging but inconclusive.

SIDE-EFFECTS

Unpleasant side-effects of Tridione therapy have been various. In several cases skin rashes caused discontinuance. Gastric disturbance has not been prominent, nor has drowsiness. A more difficult and surprising side-effect has been an unusual sensitivity of the eyes to bright daylight. This was noted by the majority of

adolescent or adult patients but only rarely by young children, although children received much larger doses per pound of weight. The symptom has not been attended by any decrease in visual acuity when indoors or alteration in the appearance of the retina or other structures of the eye. Continued use of the medicine has not caused progressive increase of photophobia, which disappears a week or ten days after the medicine is stopped. This subject is being investigated. The possibility that therapy need not be continued indefinitely minimizes anxiety regarding unpleasant chronic side-effects.

What might be called pleasant side-effects have been improved appetite and gain in weight by some patients. In others the disappearance of clinical symptoms has been marked by an improvement in the school performance or in the deportment of the child.

COMMENT

Aside from the practical therapeutic effects of Tridione therapy, use of this drug throws light on certain underlying problems of neurophysiology. Traditionally, antiepileptic drugs have been looked for among the sedatives. Yet members of the petit mal triad respond best to caffeine, amphetamine sulfate and Tridione, none of which is a soporific. Because slow brain waves predominate in petit mal, the use of stimulating drugs which increase wave frequency is logical. The clinical antithesis to diphenylhydantoin sodium, which often increases petit mal, is striking.

Possibly the drug acts on the portion of the brain from which the spike and wave pattern arises. Penfield¹³ demonstrated in 1 case that a petit mal discharge originated in the region of the infundibulum. Various bits of evidence suggest that the region of the midbrain may be important for maintenance of postural control and of consciousness. Without any doubt, Tridione is a most useful and interesting drug which will repay careful study.

CONCLUSIONS

Seizures with divergent clinical appearances, petit mal (pyknopilepsy) and myoclonic and akinetic epilepsy have two important characteristics in common: first, the alternate spike and wave pattern of the electroencephalogram, and, second, lack of benefit from the usual anticonvulsants but positive benefit from the use of a medicine not yet on the market 3,5,5-trimethyl-oxazolidine-2,4-dione (Tridione).

This medicine was given to a group of 50 patients subject to frequent daily petit mal, myoclonic or akinetic seizures not helped by previous medication. In 40 of the patients grand mal seizures, if present, were of minor importance. In a period of days to weeks the offending minor seizure ceased in 28 per cent, were reduced to less than one fourth of the usual number in 52 per cent, and were little affected in 20 per cent. In several patients seizures once stopped did not return when medication was discontinued. In 10 other patients the daily petit mal seizures were of less importance than frequent grand mal. In these Tridione stopped or lessened petit mal but proved ineffective against the grand mal seizures or even increased them.

The principal side-effect was photophobia, which affected older children and adults more frequently than the young. These observations extend over a period of fifteen months. Final evaluation of therapeutic and side-effects must await a wider and longer experience.

300 Longwood Avenue.

13. Penfield, W., and Erickson, T.: *Epilepsy and Cerebral Localization*. Springfield, Ill., Charles C. Thomas, Publisher, 1941.

ABSTRACT OF DISCUSSION

DR. ERNST WOLFF, San Francisco: Dr. Lennox's paper is of extreme interest to the practicing pediatrician for many reasons. It demonstrates in the most lucid manner the work of Dr. Lennox and his associates in establishing the differential diagnosis of seizures in childhood by means of characteristic patterns of the electroencephalogram. This fact alone restores our confidence in a method of examination which heretofore did not give us sufficiently reliable help in differential diagnosis, especially in the separation of functional from organic conditions in childhood. The therapeutic effect of Tridione in the series of cases presented is most impressive. Especially interesting is the fact that the drug needs only to be given temporarily to produce lasting effects in some cases, though this fact naturally must be definitely established by a follow-up period of longer duration. Children with seizures have great difficulty in attending schools regularly, even when under treatment with the best known drugs hitherto available. Should its effectiveness become permanently established, we may hope that Tridione will normalize the education of these unlucky patients. Since many such children have normal or high intelligence levels, good school opportunities can be a big factor in their happiness and emotional stability, not only for them, but for their families as well. A drug which will be effective against childhood seizures will drive away the clouds from many homes.

DR. M. G. PETERMAN, Milwaukee: The forms of epilepsy specified include the most baffling in this disease entity. A new drug is most welcome in the treatment of these symptoms. In my experience the akinetic form of epilepsy occurs mostly in infants and is highly resistant to all treatment. It is usually rapidly progressive and often fatal. I have seldom seen spontaneous recovery. All epilepsy must have a basic cerebral pathologic form because the electrogram consistently indicates an abnormality or dysrhythmia. Pyknopsy or pyknopsylepsy was most completely described by Friedmann and by Heilbronner. With Lennox I am unable to make a differentiation of this form of attack from petit mal epilepsy. However, I cannot be as sanguine about the spontaneous recovery. I would agree with Penfield and Erickson, who stated that "spontaneous remissions do not occur in more than 2 or 3 per cent." However, later in their book they qualify this statement considerably. Many children with petit mal attacks eventually develop grand mal seizures. I have also studied the intelligence quotient of my patients with petit mal. In 1927 I reported that these patients rated high in mental ability and were usually superior to their siblings. Eventually, however, mental deterioration does appear. Contrary to Lennox's experience, I find that fasting and subsequently a ketogenic diet, which maintain a constant hypoglycemia, rather promptly control the attacks in over one third of the patients. I have used Brain's hyperpnea test since it was described in 1924 and find that it will usually precipitate a petit mal seizure in the potential patient. It is very useful to produce the electrogram changes described by Lennox. The most effective treatment yet introduced for petit mal is the ketogenic diet. Some authors referred to the results with dilantin as a "miracle" and others stated that "petit mal attacks responded better to diphenylhydantoin than to other forms of treatment." Others report that "seizures were reduced in 59 to 84 per cent" of their patients. This is obviously not true, as Lennox states, but it has cruelly stimulated the hopes of the patient and his relatives. For many years and after an adequate trial of dilantin I have insisted that this drug and all others have no value in the treatment of petit mal. Recently even Lennox questioned whether "the patients or the author were resistant to dilantin sodium." I am pleased to read Lennox's conclusions regarding this drug. He has also effectively disposed of glutamic acid. The use of caffeine for the treatment of petit mal was reported among others by Karger in 1919. I found it to have no definite effect.

EARLY FILARIASIS IN YOUNG SOLDIERS

CLINICAL AND PATHOLOGIC ANALYSIS

MAJOP KENNETH J. THOMPSON

MEDICAL CORPS, ARMY OF THE UNITED STATES

MAJOR HAROLD RIFKIN

MEDICAL CORPS, ARMY OF THE UNITED STATES

AND

LIEUTENANT MEYER ZARROW

SANITARY CORPS, ARMY OF THE UNITED STATES

With the onset of war filariasis, known chiefly to tropical medical practitioners, became a disease to be recognized and managed by medical officers, and in the future by civilian physicians. The disease was formerly recognized by its elephantoid character in the late stages. With the onset of war, military and naval personnel residing in filarial endemic areas contracted the disease and developed new and hitherto unrecognized clinical manifestations. Sporadic reports of early filariasis have appeared of recent date in the literature. King and Wartman¹ discuss the clinical and pathologic manifestations of early filariasis in a group of soldiers residing in the Samoan Islands. Michael² describes a similar picture among naval and marine personnel, who have been evacuated to state-side naval hospitals. Zuckerman and Hibbard³ have described changes occurring in the lymphatic tissues of patients infected in the South Pacific Islands. Rifkin and Thompson⁴ describe their observations on structural changes occurring in lymph nodes and lymphatic vessel biopsies from a group of 30 soldiers who resided in filarial areas for an average period of one year. They further stress, with Michael² and Zuckerman,³ the allergic nature of the disease during its early and acute phase. Pasternak⁵ has described the clinical findings and the morphologic features in 2 cases of acute filarial epididymofuniculitis. Sapero,⁶ describing epidemic diseases in the early phases of the war, stresses the importance of early recognition of filariasis. Manson-Bahr⁷ and O'Connor and Hulse⁸ have described the clinical and pathologic findings of filarial disease in natives. Their brilliant work, we feel, is however not directly associated with the type of disease we have seen in military personnel.

In the last two years an attempt has been made by us to delineate the underlying changes occurring in the early stages of the disease. A clinicopathologic concept of early filariasis has been developed as a result of prolonged clinical observation of the patients, correlation with the histologic findings from representative biopsies of lymph node and lymphatic vessels, and observations of a skin test utilizing titer dilutions of *Dirofilaria immitis* as an antigen. It is felt that this is important to the internist and general practitioner in his differ-

1. Wartman, W. B.: Lesions of the Lymphatic System in Early Filariasis, *Am. J. Trop. Med.* 24: 299-313 (Sept.) 1944.

2. Michael, P.: Filariasis Among Navy and Marine Personnel: Report on Laboratory Investigations, *U. S. Nav. M. Bull.* 43: 1059-1079 (May) 1944.

3. Zuckerman, S. S., and Hibbard, J. S.: Clinicopathological Study of Early Filariasis, with Lymph Node Biopsies, *U. S. Nav. M. Bull.* 44: 27-36 (Jan.) 1945.

4. Rifkin, Harold, and Thompson, K. J.: Observations on the Structural Changes Occurring in Filariasis, *Arch. Path.*, to be published.

5. Pasternak, J. G.: Filarial Epididymofuniculitis, *Arch. Path.* 35: 414 (March) 1943.

6. Sapero, J. J., and Butler, F. A.: Highlights on Epidemic Diseases Occurring in Military Forces in the Early Phases of the War in the South Pacific, *J. A. M. A.* 127: 502-506 (March 3) 1945.

7. Manson-Bahr, P. H.: *Manson's Tropical Diseases*, London, Cassell & Co., Ltd., 1942.

8. O'Connor, F. W., and Hulse, C. R.: Some Pathological Changes Associated with *Wuchereria Bancrofti* Infection, *Tr. Roy. Soc. Trop. Med. & Hyg.* 25: 445-454 (May) 1932.

ential diagnosis of lymph node enlargements, to the urologist for his distinction of filarial epididymo-orchitis, to the general surgeon for his differential diagnosis of filarial lymphangitis and filarial abscesses and for his proper selection of node biopsies and finally to the pathologist for his recognition and appreciation of another endothelial granuloma.

In examining a group of 200 patients infected with filariasis, it became evident that there was no one symptom or sign that was constant in every case. All patients fell into one of the following general groups:

1. The first group comprises patients in whom the predominating finding is an acute lymphangitis involving the upper or lower extremities, sometimes both, either unilateral or bilateral. There may be a history here of one to several attacks.

2. The chief complaint in the second group is an acute funiculitis or epididymitis. The attacks here may be single or multiple. With repeated attacks the cord structure may be involved first on one side and then on the other. A bilateral involvement has been noted in an occasional case. In the main, the attacks usually confine themselves to one side.

3. The third group usually give a past history of an acute episode of lymphangitis or funiculitis one to eight months prior to hospital admission. On examination they usually have no complaints or clinical findings with the exception of a generalized lymph node enlargement.

4. In the fourth group the patients usually complain of an aching, tiring extremity, frequently associated with malaise, weakness and fever. There may or may not be history of an acute lymphangitis. Generalized lymph node enlargement is always present.

5. The fifth is a large group of patients who have had no clinical findings suggestive of the disease but who have resided in endemic areas and who give a positive skin reaction to *Dirofilaria immitis* antigen in dilutions varying from 1:4,000 to 1:16,000. On physical examination they present generalized lymphadenopathy.

6. In the sixth and final group the patients show intermittent swelling of the extremities. This is usually associated with a past history of an acute lymphangitis.

It is to be especially noted that all six groups have one finding in common, namely persistently enlarged and palpable lymph nodes. Those patients who have recently had lymphadenitis or funiculitis will usually show larger or softer feeling nodes. These are usually tender to palpation. As the disease progresses the nodes are likely to become smaller and have a firm and brawny feel to the palpating finger.

With such a varied clinical picture it was impossible to determine accurately whether a given patient had actually been infected with the disease or not. It was decided, therefore, to take complete and accurate clinical histories of each suspected patient. On these patients a careful laboratory work-up was performed. This included complete blood counts, study of peripheral smears for eosinophils, stool examinations, skin testing with a *Dirofilaria immitis* antigen in titer dilutions and, finally, biopsies of focal lymph nodes or lymphatic channels. As a result of correlation of biopsy studies and clinical findings, a concept and classification of the disease soon began to develop. At the present time we feel that there are three stages in early filariasis, namely the acute stage, the early subacute stage and the late subacute or early chronic stage of the disease. The typical morphologic findings in these phases of the

disease have been described in full in a report by Rifkin and Thompson.⁴

A word about biopsies: All biopsies have been taken from superficial lymphatics or lymph nodes. In the cases of acute lymphangitis, a thickened lymphatic channel can usually be palpated. Section of this structure will usually show the characteristic morphologic findings. Where funiculitis is a primary feature, biopsy specimens should be secured from the pampiniform plexus. This means more than exposing the dartos muscle. The muscles must be dissected from the cord and the actual section taken from the plexus. This is performed under local anesthesia by isolation of a small segment of the plexus, ligating above and below and removing the intervening segment. If the case is one of acute filariasis, the plexus and the structures of the cord are edematous and thickened. The individual lymphatics stand out, giving the impression of a strand of vermicelli macaroni. In cases of funiculitis and epididymitis there will often be enlargement of the inguinal nodes, and particularly of the node over the fossa ovalis. During the course of an examination this node should always be palpated. Biopsy of an enlarged node from these areas will reveal typical microscopic pictures and frequently the actual parasite. In addition to the enlarged regional nodes, one not uncommonly finds enlarged parafoveal bizarrely placed nodes. These, on biopsy, may show the microscopic picture of filariasis. From our experience the axillary nodes are more likely to show positive microscopic findings than the inguinal nodes. There is always a temptation to remove an inguinal node which is suspiciously enlarged because of its easier accessibility. The indiscriminate taking of biopsies will often lead to disappointment. In general, the node nearest the site of involvement should be taken. Further, if an acute lymphatic channel or a bizarrely placed lymph node can be palpated, these should be selected for biopsy. As has already been mentioned, the disease is believed to be systemic in nature. It is felt that the disease during its early acute manifestations is of an allergic nature, and as a result the lymphatic tissues throughout the body exhibit follicular hyperplasia associated with edema and eosinophilic infiltration of lymphatic channel walls and node structure. It is possible in this particular phase to remove a node or lymphatic vessel which is not the primary focus but which may still retain the characteristic findings of the acute allergic phase. It must be cautioned, however, that this occurs only during the acute or acute exacerbating phases of the disease.

Little is to be learned from incidence of primary involvement of the various lymph nodes. The nodes and structures selected for biopsies were 41 inguinal nodes, 9 axillary nodes, 18 epitrochlear nodes, 6 bizarre nodes, 11 pampiniform plexuses and 5 nodes over the fossa ovalis.

In 30 cases biopsies were taken from more than one lesion. Such combinations included right axillary and left inguinal nodes, left epitrochlear and right axillary nodes and sections from the right pampiniform plexus and left inguinal nodes.

As already stated, it appears that early filariasis may be divided into three phases, namely the early acute or allergic phase, the subacute phase, and the early chronic phase of the disease. There is no classification which can sharply delimit and define clinical medicine. In the main, however, it will be seen that patients infected with filariasis will fall into one of the categories to be described.

CLINICOPATHOLOGIC STAGE OF DISEASE

(a) *Acute Stage*.—This stage is commonly characterized by a sudden onset of lymphangitis with pain and swelling and enlargement of regional lymph nodes. The lymphangitis is usually fleeting in its duration, lasting in many instances three to four days and beginning to fade in twenty-four hours. The lymphangitis is peculiar in that it does not resemble the septic or bacterial variety. There is little fever, the temperature usually ranging from 99 to 100 F. Constitutional symptoms are rare. With the exception of slight malaise, no other symptoms are usually noted. A striking finding is the occurrence frequently of a centrifugal or retrograde lymphangitis. It will sometimes occur in the upper arm and work its way to the wrist. The general type of lymphatic infection extends in the direction of the lymph flow. Further, some patients may develop several attacks of lymphangitis recurring over a period of eight to nine months. Other cases may exhibit only an initial attack of lymphangitis and then progress into the subacute or late phase. In a number of cases there may be no history of an acute lymphangitis.

Not uncommonly in the acute stage of the disease one will encounter the enlarged bizarrely placed lymph nodes. There is no particular location for these lesions. They are not uncommonly found at the tip of the ileum, in the midarm and in the region of the teres and serratus muscles. This type of gland is not usually found in the true bacterial lymphangitis. In addition to these bizarrely placed lymph glands one can frequently palpate discrete lymphatic channels during the time when the lymphangitis is at its height.

There is a high incidence of funiculitis and epididymitis. Approximately one half of the patients complain of pain and swelling in the region of the cord or epididymis. The patients usually complain of pain and heaviness in the testicles of several days' duration, followed by enlargement. The enlargement may be minimal or the testicles may enlarge two to three times their average size. The condition is usually unilateral, although a second attack may involve the opposite side. For the most part, one side is usually selected. The funiculitis or epididymitis may subside quickly, within a matter of a few days, similar to that of the lymphangitis of the upper or lower extremity. Accompanying the enlargement of the cord there is commonly found a small hydrocele and frequently a brawny, edematous feel to the scrotum. The inguinal glands are slightly enlarged. There is no mistaking the typical feel of the structures of the cord. The cord itself sometimes becomes as large as the thumb, and the vas may be as thick as a lead pencil.

With the acute lymphangitis, whether it is in the arm, in the leg or in the structures of the cord, there is always associated a lymphadenitis. The lymphadenitis is not distinctive of the acute stage but is common to all stages of the disease. In addition to enlargement of the nodes, one will often find distantly placed enlarged lymph nodes. The one feature of these nodes, which may be considered characteristic of the acute phase of the disease, is that they are often larger and softer feeling than those of the later stages.

Not infrequently, try as hard as one may, one cannot obtain a history of acute lymphangitis or funiculitis. Yet on the removal of an involved node one may find the typical morphologic findings of the acute phase of the disease. The only explanation offered for this is that the patient may have built up an immunity to

filariasis, or he may have been unobservant of his very early and sometimes minimal lymphangitis.

The laboratory findings are much the same: negative filarial blood smears, positive skin reactions in dilutions of 1:4,000 or higher, slight to moderate eosinophilia, white and red blood cell counts not remarkable. Knott's concentration smears have been run on all patients. We have been unable to demonstrate the microfilariae in the blood stream. The literature records 2 cases of positive blood smears in young soldiers infected with the disease.¹⁰

The pathologic findings of the lymph nodes in the acute stage are characterized by hyperplasia of the lymph follicles, eosinophilic infiltration throughout the node and edema. The cells are true eosinophilic leukocytes. The stain is constantly acidophilic. The nuclei are either bilobed or trilobed. The edema is denoted by the presence of a pink staining albuminoid fluid in the afferent and efferent lymphatics. It is interesting to note that in many cases the macrofilariae with their double contoured uterus are visible. In other nodes, worm segments or microfilariae are evident. The reaction is the same whether the worms are present or absent. Two theories are postulated regarding the absence of worm foci and a positive morphologic reaction. First, there is possibly disintegration of a previously existing worms or worm focus; second, the node is not the primary focus but one which shares in the general systemic reaction.

The morphologic findings in an acute filarial lymphangitis consist chiefly of thickening, edema and eosinophilic infiltration of the lymphatic wall. The lumen is occupied by an acute thrombus in which the eosinophils have become pyknotic and aggregated themselves into a necrotic amorphous mass. In some cases it is possible to note worms, worm segments or microfilariae. In the larger majority of cases, however, these are usually absent and the diagnosis is made chiefly on morphologic grounds. It has been possible to examine lymph nodes far removed from the actual source of infection which show the characteristic reaction. There is no evidence here of macrofilariae or microfilariae. Examination of superficial lymphatic tissues which do not appear to be clinically involved reveals moderate eosinophilic infiltration of their walls with a pink-stained edema fluid within the lumen. This we believe offers one bit of evidence toward a generalized systemic nature of the disease process.

(b) *Subacute Phase of Early Filariasis*.—In contrast to the acute lymphangitis, the patient will often complain of a heaviness, tiredness and aching of the involved part, and oftentimes there is little clinical evidence of the disease. Lymphangitis, swelling or edema is not noted. Occasionally there may be a history of mild recurrent attacks of edema, fleeting in nature, and often following heavy physical exertion.

Often the only objective findings are some small regional nodes, perhaps a bit more firm than usual. At times they may be almost shotty-like, while in the allergic phase the nodes will be definitely enlarged and succulent. At this time there are no bizarrely placed groups of glands nor are there any swollen, enlarged lymphatic channels. The glands would almost invariably be overlooked if it were not for the history of residing in filarial areas or a history of an acute episode.

9. Knott, J.: Method for Making Microfilarial Surveys on Dry Blood. *Tr. Roy. Soc. Trop. Med. & Hyg.* 43: 191-196 (July) 1939.
10. Filariasis. *Bull. U. S. Army M. Dept.* February 1915, No. 15 p. 16.

This stage is represented histologically by a proliferative granulomatous reaction present within the lumen of the lymphatics, involving the wall of the lymphatics and the lymph node structure. Here one sees a macrophagic proliferation, with the formation of small epithelioid cell foci throughout the lymph cords and infiltrating the walls of the lymphatics and involving the periglandular connective tissue. It is possible in some cases to see persisting eosinophils associated with aggregates of macrophages. Actual epithelioid cell tuberculoid foci are noted, the center of which may be occupied by a degenerating macrofilaria, which in turn is surrounded by epithelioid cells embedded in concentric laminae of collagenous tissue. At the periphery, accumulations of lymphocytes and plasma cells are noted. In some nodes the worms have undergone complete necrosis and cannot be recognized. Here the central zone consists of a pink-red staining caseo-necrotic material with radially arranged macrophages. This has an almost identical appearance to a true tubercle. We have classified these lesions as tuberculoid focal granulomas. The lumens of the lymphatics show partial to complete occlusion by a similar infiltrate of epithelioid cells and round cells. The endothelial lining may show a severe degree of irregular stratification, protruding in uneven fashion into the lumen as a cellular thrombus. The walls of these lymphatics are thickened by a similar macrophagic overgrowth. Concentrically arranged around the wall are usually noted accumulations of epithelioid cells with clear reticular cytoplasm, vesicular nuclei and light staining nuclear membranes. We subscribe to the terms of epithelioid cell endolymphangitis and perilymphangitis first utilized by Hartz.¹¹ It is of interest to note that the periphery of these tuberculoid granulomas may be occupied by accumulations of spindle shaped fibroblasts. This marks the end stage of the subacute phase of early filariasis or the beginning of the early chronic phase of the disease.

(c) *Late Stage of Early Filariasis.*—Finally there is the so-called "late stage," which is merely a progression of the previous two phases. We have seen 10 typical cases of this stage, and it might be termed the beginning of the chronic stage of the disease. However, we have no way of telling what the future progress of the patients will be. None have shown the microfilariae in the blood stream nor have they shown the infective type of lymphangitis belonging to the chronic elephantoid stage. The cases in this stage may go on to complete subsidence with disappearance of the symptoms.

The late stage of early filariasis occurs at a variable time following the onset of the early allergic phase. The only clinical manifestation is a chronic swelling with increase in size of an extremity, with or without pitting edema. Accompanying this there are complaints of tiredness and aching of the extremity.

It might well be argued that this late stage is really chronic filariasis and has no part in the discussion of the acute disease. We have observed it within twenty months after exposure; it has no distinct microscopic picture and clinically lacks many of the features of the chronic elephantoid stage of the disease as described in textbooks.

Histologically there is no distinct pattern, so that one cannot definitely denote the lesion as being a specific for filariasis. The predominant findings consist of a

generalized reticuloendothelial hyperplasia with irregular areas of fibrosis. The lymphatics in the periglandular connective tissues, as well as the superficial lymphatics, show the replacement of a cellular infiltrate in the lumen and walls by a fibroblastic ingrowth. Here the lymphatic vessels may be reduced to a fibrous cord with its lumen hardly recognizable. Zuckerman aptly refers to such a lesion as an obliterative endolymphangitis.

SKIN TESTS

We have utilized a *Dirofilaria immitis* antigen prepared according to the method of Dickson, Huntington and Eichold¹² with certain modifications. Complete details on the procedures and our results have already been published by Zarrow and Rifkin.¹³ Briefly, the method of preparation is as follows: Dogs are killed by an intravenous injection of magnesium sulfate and their hearts removed. An incision is made into the right ventricle and auricle, and the adult worms are removed and placed in isotonic solution of sodium chloride. The worms are washed overnight in running water and treated with several changes of acetone. Following this they are thoroughly dried and a powder is then prepared. Extraction is then made as a 1 per cent suspension in isotonic solution of sodium chloride. This was sterilized by Seitz filtration with the addition of phenol. From a stock extract, dilutions of 1:200, 1:2,000, 1:4,000, 1:8,000 and 1:16,000 were made. Owing to the fact that the extracted material will lose its potency, the dried powder was maintained as a stock source and new dilutions were made every month. A volume of 0.05 cc. was injected on the volar surface of the arm. Dilutions of 1:2,000, 1:4,000, 1:8,000 and 1:16,000 were utilized. A control was injected, which consisted of a fragment of heart muscle which had been treated identically as the antigen. Readings are taken after thirty minutes and twenty-four hours. A positive reaction is considered as a definite increase in wheal size over the control plus an erythema measuring 2 cm. in diameter after thirty minutes.

In an attempt to determine the specificity of the *Dirofilaria immitis* antigen in the skin test, it was possible to compare results of lymph node biopsy with results of skin tests. In a control group of 53 patients suspected of clinical filariasis, 60 per cent were proved to have this disease on biopsy. In this same group 73 per cent gave a positive reaction to a titer of 1:4,000 or higher. In 3 cases a positive biopsy was obtained with a negative skin test. The desensitization has been noted previously by Dickson and his associates¹² and appears to be a true factor and not due to loss of extract potency. In a separate series of 91 patients with clinical symptoms of filariasis, 94 per cent gave a positive response to a dilution of 1:4,000 or above. Biopsies were not performed on this group.

It has been claimed that patients with intestinal helminthiasis are sensitive to intradermal injections of *Dirofilaria immitis* antigen. A series of 65 patients, all free of clinical filariasis, were injected with the antigen. These patients harbored hookworm, *Strongyloides stercoralis*, *Ascaris lumbricoides*, *Enterobius vermicularis* and *Hymenolepis nana*. With one exception no positive reaction was obtained with a dilution of 1:2,000 or higher. This patient had clinical herpes

12. Dickson, J. G.; Huntington, R. W., Jr., and Eichold, S.: Filariasis in Defense Force, Samoan Group, U. S. Nav. M. Bull. 41: 1240-1251 (Sept.) 1943.

13. Zarrow, M., and Rifkin, Harold: Observations on the Specificity and Clinical Use of *Dirofilaria immitis* Antigen in the Diagnosis of Human Filariasis, Am. J. M. Sc., to be published.

11. Hartz, P. H.: Contributions to Histopathology of Filariasis, Am. J. Clin. Path. 1: 34-43 (Jan.) 1944.

zoster. It is felt, therefore, that a titer of 1:4,000 or higher of a nonspecific *Dirofilaria immitis* antigen is diagnostic of filarial infection in human beings.

LABORATORY DATA

Complete blood counts were performed on all patients. The red blood cell counts and hemoglobins were within normal limits. Neutrophils, monocytes and lymphocytes showed no aberration. Seventy-five per cent of the patients gave a white blood cell count between 7,500 and 8,500. Twenty-five per cent gave an elevation to 10,000. Of the entire group 34 per cent showed an eosinophilia. This never went higher than 28 per cent. The average was maintained from 10 to 15 per cent. In the latter group intestinal helminths were found in 15 per cent.

CASE HISTORIES

CASE 1.—*An acute filarial reaction in an involved lymphatic.* A white soldier aged 22 entered the hospital eighteen months after his first possible exposure to filariasis. The history revealed that ten months after arrival in an endemic filarial area the patient developed an epididymitis and funiculitis on the right side. The right testicle became swollen to twice normal size, and the right cord was likewise enlarged and tender. The acute symptoms subsided in fifteen days. However, since the original onset the right cord structures had remained slightly larger than the left, and the patient had complained of a mild pain in the right testicle. Four days before entry to the hospital the right cord again became tender and swollen. Examination showed the right cord structures to be three times normal size. The vas could be palpated as pencil in size; the epididymis was large, boggy and tender. The left cord and epididymis were normal. A moderately enlarged right inguinal gland was palpable. The right axillary glands were enlarged, nontender and freely movable. Laboratory examination revealed the skin test positive in 1:4,000, stool normal, Knott concentration tests negative for microfilariae, white blood cells 8,600, eosinophils 8 per cent. A section of the right pampiniform plexus was removed for biopsy.

Microscopic examination revealed lymphatics the lumen of which was filled with a cellular thrombus consisting of eosinophilic leukocytes, epithelioid cells, broken-down red blood cells and cellular debris. The wall was intensely hyperplastic and was infiltrated with large numbers of mature eosinophilic leukocytes, epithelioid cells and young spindle shaped fibroblasts. An interesting feature was the presence of a small pyknotic, eosinophilic tubercloid focus at the periphery of the cellular hyperplastic wall. A section of this tubercle consisted of necrotic pink-staining; debris surrounded by aggregates of eosinophils and epithelioid cells. Giant cells were not visible. There was 1 lymphatic present, in which there was a small cellular focus consisting of fibroblasts, lymphocytes, plasma cells and epithelioid cells covered partially by a thin endothelial membrane. This projected into the lumen as a true endolymphangitic thrombus. The periphery of the wall was infiltrated with a similar type of cells.

CASE 2.—*A proliferative granulomatous reaction, subacute phase.* A soldier aged 23 with thirty-one months of overseas duty entered the hospital complaining of enlargement of the right arm and forearm of three days' duration. The history revealed that the patient had spent twenty months in a filarial area. During this time there had been several minor attacks of pain and swelling in the right arm, though there was no definite history of lymphangitis. The right epitrochlear gland was not palpable. The axillary glands were enlarged, moderately firm and freely movable. There was no other glandular enlargement. The epididymis and cord, right and left, were normal. Laboratory examination revealed Knott concentration smears negative for microfilariae, white blood cells 8,200, eosinophils 10 per cent, and stool normal. A left axillary gland was removed for biopsy.

Microscopic examination revealed extensive hyperplastic reaction of the lymph follicles. The germinal centers shared most prominently in this reaction. They were filled with lymphocytes, plasma cells, mononuclear histiocytes and small numbers of epithelioid cells. Present in the cortical sinuses were small numbers of epithelioid cells having a clear reticular cytoplasm containing vesicular or bandlike nuclei with a distinct nuclear membrane. Within a small number of germinal centers were multinucleated giant cells. Present in one area were four caseating tubercloid foci. These tubercles consisted of a central amorphous caseating mass, which was surrounded by palisades of epithelioid cells. Between and surrounding these epithelioid cells were large numbers of lymphocytes, plasma cells and small numbers of Langhans giant cells. The afferent lymphatics and intermediate sinuses gave a typical epithelioid endolymphatic and perilymphatic granulomatous reaction. Careful search through the entire node revealed no evidence of microfilariae or microfilariæ.

CASE 3.—*The subacute phase with an acute exacerbation.* A soldier aged 23 had spent twenty-eight months overseas, twenty-three months of which had been spent in areas endemic for filariasis. The patient gave no history of having had any subjective or clinical findings compatible with filariasis until two weeks prior to entry into the hospital. At this time he complained of pain and swelling in the left arm. Examination showed a linear area of redness and swelling in the midportion, volar aspect of the left arm and measuring 5 to 8 cm. There was an enlarged, tender lymph gland in this area. There were a few small, palpable left axillary glands. There was no other glandular enlargement. The laboratory investigation revealed the skin test positive in a dilution of 1:2,000 (no higher dilution was used in this case). Stools were normal, Knott concentration tests negative for microfilariae, white blood cells 7,600, eosinophils 4 per cent. The bizarrely placed gland on the medial aspect of the left arm was removed for biopsy.

Microscopically the most striking change was the presence of small accumulations of epithelioid cells throughout the lymph node. These were found in the cortical follicles including the germinal centers and also in the intermediate sinuses. These cells were irregular in shape, with oval nuclei and distinct nucleoli. Accompanying these epithelioid cells were characteristic foreign body giant cells lying among the epithelioid cells. Small foci of eosinophilic leukocytes were irregularly scattered throughout. A characteristic reaction was found in the sinuses and in the afferent and efferent lymphatics. This was actually a granulomatous endolymphangitis and perilymphangitis. Within the lymphatics and almost completely occluding them were collections of epithelioid cells, lymphocytes and histiocytes, which bore no relationship to the wall of the vessel. These loose connections of cells were occasionally accompanied by foreign body giant cells. In a number of lymphatics, thin strands of pink-staining connective tissue fibers could be observed ramifying in this cellular infiltrate. In one or two afferent vessels, living microfilariae were observed containing an outer pink-staining cuticle and an inner pink-staining double contoured uterus; within this uterus were deeply basophilic round bodies, which apparently represented primary larval forms. The lymphatics here showed a distinct granulomatous perilymphangitis. These consisted of accumulations of histiocytes, epithelioid cells, lymphocytes and small numbers of eosinophilic leukocytes surrounding these involved lymphatics. The walls of the lymphatics were indented into the lumen and exhibited a piling up of the endothelium. In the surrounding connective tissue small pseudotubercles were visible consisting of a central core of epithelioid cells and an occasional eosinophil; these in turn were surrounded by perifocal early fibrosis. There were one or two areas which contained a distinct pyknotic necrotic central zone in which fragmented microfilariae were visible. These were surrounded by layers of epithelioid cells, eosinophils, lymphocytes and plasma cells. There was one medullary sinus containing a necrotic adult worm which was surrounded by a focal layer of hyalinized fibrotic tissue. In a number of the sections the lymphatics were dilated and filled with thin albuminoid pink-staining material. The endothelial lining here presented scalloping with moderate stratification.

CASE 4.—Primary genital involvement with acute allergic systemic reaction. A soldier aged 21 with a fifteen month overseas tour of duty entered the hospital complaining of pain and swelling of the right testicle of three days' duration. The history revealed that the patient had resided in a filarial endemic area for nine months, at the end of which time he developed pain and swelling of the right cord and epididymis with right inguinal node enlargement. The symptoms subsided in two days. The patient was evacuated to a nonendemic area and remained free from symptoms for nine months. The present attack of pain and swelling of the right cord began three days before entry to the hospital. Examination showed the right cord structures to be enlarged one to two times normal size, the vas being definitely increased in size. The right epididymis was enlarged to twice normal size and the sulcus obliterated. There was a firm mass felt in the right pampiniform plexus just above the epididymis. There was also an enlarged, tender right inguinal gland. The epitrochlear nodes were not palpable. However, the right axillary nodes were enlarged. Laboratory examination revealed the skin test positive in a dilution of 1:16,000, the stools positive for *Endameba coli*, Knott concentration smears negative for microfilariae, white blood cells 9,200, eosinophils 4 per cent. A specimen for biopsy was taken from the right pampiniform plexus, and the right inguinal gland was also removed.

Microscopic examination of the lymph node revealed an intense hyperplasia of the lymphoid follicles. The germinal centers were enlarged two to three times their normal size. They contained early and mature lymphocytes and plasma cells. The peripheral sinuses were crowded with mature lymphocytes, plasma cells and numerous eosinophilic leukocytes. Ramifying throughout the periglandular connective tissue, trabeculae, lymph sinuses and lymph cords were numerous mature eosinophils. The lymphatics, predominantly the afferent channels, contained a thin pink-staining albuminoid fluid material. There was no evidence of worm foci present. Microfilariae were not visible. A granulomatous reaction was not present. There was no indication at this stage of an epithelioid endo-lymphangitis or perilymphangitis.

Microscopic examination of sections of the pampiniform plexus revealed large aggregates of eosinophilic leukocytes strewn throughout the areolar connective tissue. These eosinophils were associated with small collections of lymphocytes, plasma cells and an occasional epithelioid cell and were seen infiltrating the media and adventitia of the small venules and walls of the lymphatics. In a number of areas these eosinophils had aggregated together and become pyknotic, and surrounding this necrotic central focus were tiny collections of epithelioid cells exhibiting a clear reticular cytoplasm. There was no evidence of giant cells or caseation. Worm foci were visible.

SUMMARY

A clinic-pathologic concept of early filariasis has been developed as a result of prolonged clinical observation of young soldiers residing in endemic areas, correlation with biopsy studies and the utilization of a skin test employing *Dirofilaria immitis* as an antigen in titer dilution.

It is believed that the disease, as manifested in this group, can be subdivided into three phases, namely acute, subacute and early chronic stage.

The acute and subacute phases have distinct clinical pictures and typical morphologic findings. The chronic stage is clinically silent and histologically is characterized predominantly by fibrosis.

Direct smears and Knott concentration methods have persistently failed to reveal microfilariae in the blood stream.

Evidence was obtained to support the systemic and constitutional nature of the disease during its early stages.

LARGE SCALE TESTING FOR RH NEGATIVE BLOOD

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WITH THE TECHNICAL ASSISTANCE OF EVAN L. DURHAM
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The role played by the Rh factor in the etiology of transfusion reactions has been well known since the work of Wiener and Peters¹ and of Levine and his co-workers.² These reactions may be divided into two groups. The first and most common is that occurring in Rh negative pregnant or postpartum women because of the presence in their blood of anti-Rh agglutinins due to immunization by Rh positive fetal blood. The second group is that occurring in Rh negative individuals who have been the recipients of one or more transfusions of Rh positive blood, as a result of which anti-Rh agglutinins have been formed in their blood. In both groups therefore the reactions are caused by the transfusion of Rh positive blood into recipients whose blood contains anti-Rh agglutinins.

TABLE 1.—Rh Tests on Random White Population

	Male	Female	Total
Number of tests.....	12,506	9,307	22,133
Number of Rh negative bloods.....	1,853 (14.6%)	1,590 (17%)	3,143 (14.2%)

TABLE 2.—Rh Tests on Random Colored Population

	Male	Female	Total
Number of tests.....	135	158	293
Number of Rh negative bloods.....	11 (10.4%)	15 (9.5%)	28 (9.59%)

The Army Whole Blood Procurement Service is particularly interested in this problem. The function of this service is to supply whole blood to the overseas theaters of war. Every effort is made to have this blood supply as safe and effective as possible. Obviously, the proper management of the severely wounded demands multiple transfusion of whole blood. As many as thirty transfusions to 1 casualty in a relatively short time is not uncommon. Since about 14 per cent of the random white population is Rh negative, it follows that many of these recipients of multiple transfusion may have reactions. With this in mind a project was established of shipping quantities of Rh negative blood as part of the regular blood supply.

In order to obtain Rh negative blood in quantity, it was necessary to utilize an easy and swift method of Rh determination. The complete Rh typing of a blood using anti-Rh₀, anti-Rh' and anti-Rh'' serums is unnecessary for practical use. The use of the combined serums anti-Rh₀' containing the two agglutinins anti-Rh₀ and anti-Rh' will react with 87 per cent of cells from the random white population and will miss only 0.5 per cent of Rh positive cells, namely the Rh'' phenotype. Through the courtesy of Dr. Louis Diamond

From the Army Whole Blood Procurement Service, 2 East 37th Street, New York 16.

1. Wiener, A. S., and Peters, H. R.: Hemolytic Reactions Following Transfusions of Blood of the Homologous Group, *Ann. Int. Med.* 13: 276 (June) 1940.

2. Levine, Philip; Katzin, E. M., and Barnham, Lyman: Immunization in Pregnancy: Its Possible Bearing on the Etiology of Erythroblastosis Fetalis, *J. A. M. A.* 116: 225 (March 1) 1941.

of the Boston Blood Grouping Laboratory, we were supplied with anti-Rh₀' serum. This is a potent human antiserum with an agglutinin titer of well over 1 to 1,000 and with a high avidity index. All positive cells show agglutination in two minutes at the maximum.

TECHNIC

Each bottle of blood is brought to the laboratory with a sample of undiluted blood accompanying it. The undiluted cell suspension, remaining after the serum in the sample tube has been aspirated, is used for the test. The actual testing is done on a plate glass slide 8 by 7 inches ruled off into 1 inch squares. This permits fifty tests to be run simultaneously, together with necessary controls. One drop of anti-Rh₀' serum is placed on each square, using the dropper supplied with the bottle. One drop of the undiluted cell suspension is added with a separate medicine dropper for each test. The resulting suspension is then thoroughly mixed by using the bottom of a Kahn tube, which is wiped dry after each use. Controls with known negative and positive cells are set up. The cell mixtures are allowed to remain on the flat surface for one minute, and then the slide is rotated gently from side to side to loosen any cells adherent to the plate glass. When the positive control shows complete agglutination—usually within a minute—the tests are immediately read macroscopically. Cells over 24 hours old should not be used. The anti-serum, which is kept in a refrigerator, should be at room temperature when used for testing. The actual setting up and reading of fifty such tests takes about fifteen minutes.

In order to check the accuracy of this technic a parallel test was run with the test tube method. A human anti-Rh₀ serum prepared by Capt. John Elliot, Sn. C., of the Department of Surgical Physiology, Army Medical School, Washington, D. C. was used with the following technic:

Three cc. of isotonic solution of sodium chloride is added to the blood clot remaining in the original pilot tube. The added saline solution is drawn up and expelled a few times by a medicine dropper. A separate medicine dropper is used for each tube. This results in an approximately 2 per cent cell suspension. One drop of the 2 per cent cell suspension and one drop of the anti-Rh₀ serum is placed in a Kahn tube. The tube is well shaken and placed in a water bath at 37 C. for one hour. The tubes are then centrifuged at 1,000 revolutions per minute for one and one-half minutes and immediately read for macroscopic agglutination. If none is visible, a drop is examined on a slide, microscopically. The presence of agglutination designates the blood as Rh positive; its absence denotes an Rh negative blood. Known positive and known negative controls are also run with this technic.

There was 98 per cent agreement of the results by the test tube and the slide method. The difference is explained by the fact that one serum is of the 85 per cent type while the other is of the 87 per cent. For complete accuracy, only those bloods were recorded as Rh negative which were negative to both tests. This means, in effect, that the recorded negative bloods were the results of testing with Rh₀ antiserum. The finding of 14.2 per cent Rh negative blood in 22,133 tests is in accordance with previously recorded figures.³ It was interesting to note the almost perfect agreement of the percentage of Rh negative males and females.

In compiling these figures there were noted 283 Negro bloods, which were separately recorded. The percentage of Rh negative bloods was consistent with the results of other investigators.¹

In the course of these investigations several anti-Rh serums of the animal type were used. In our hands these serums were not sufficiently accurate for routine use either by the slide or by the test tube technic. Several human anti-Rh serums were also tested and it was found that only those of a high agglutinin titer, at least 1:1,000, and a high avidity index were acceptable for the slide test. Weaker human anti-Rh serums are satisfactory for the tube technic. Dried human anti-Rh serums also have been found to be quite accurate.

COMMENT

The present day knowledge of the importance of the Rh factor to the clinician, particularly the obstetrician, the pediatrician and the transfusionist, makes imperative the determination of its presence or absence in a large number of persons. Certainly no premarital, antepartum or pretransfusion examination is complete without an Rh testing. Using a high titered human antiserum with a high avidity index, the slide technic has been most satisfactory for large scale Rh testing. The ease with which Rh testing can be performed on a large scale should place it in the category of a routine test.

PHTHALYLSULFATHIAZOLE

("SULFATHALIDINE")

CLINICAL, CHEMICAL AND BACTERIOLOGIC EVALUATIONS IN INFECTIOUS DISEASES OF THE COLON

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While good results have been obtained with sulfonamides previously utilized in the intestinal canal, one is constantly on the alert for an agent that may approximate perfection. In recent years sulfaguanidine and succinylsulfathiazole (sulfasuxidine)¹ have been the two agents most widely used in the management of infectious diseases of the colon. Favorable results were obtained in a large percentage of patients treated with the two sulfonamides just mentioned.

In the evaluation of sulfaguanidine it is my experience that this agent is more toxic than succinylsulfathiazole, that larger dosages are required for optimum results and that the blood concentration determinations reach a higher level. Succinylsulfathiazole, on the other hand, is apparently less toxic and, while large doses have been prescribed orally, the blood levels range between 1 and 1.5 mg. per hundred cubic centimeters of blood irrespective of the duration of administration of the drug, thus indicating that the absorption of the drug from the gastrointestinal tract is negligible.

Recently a new sulfonamide has been developed named phthalylsulfathiazole, or sulfathalidine. This compound is similar to succinylsulfathiazole chemically

1. Wiener, A. S.; Belkin, R. B., and Sam, E. B.: Distribution of Az-11-O, M-N and Rh Blood Factors Among Negroes in New York City. *Am. J. Phys. Anthropol.* 22:167 (June) 1944.

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Miss Catherine Grenier, research assistant, Dr. Robert W. Keeton, head of the Department of Medicine, and Dr. Milan Novak, head of the Department of Bacteriology, made helpful suggestions in this study.

1. Streicher, M. H.: *M. Clin. North America* 27:189, 1943.

3. Levine, Philip: Tables of Tests Made with Human Anti-Rh Sera, in Karsner, H. T., and Hooker, S. B.: *The 1941 Year Book of Pathology and Immunology* (Chicago, Year Book Publishers, Inc., 1941), p. 508.

and therapeutically but is more effective. Ross and Poth² have reported that phthalylsulfathiazole is absorbed sparingly from the gastrointestinal tract, that it maintains low concentrations in the blood (0.1 mg. to 1.5 mg.) and that it is rapidly excreted in the urine; they claim that the new drug has two to four times

TABLE 1—Efficacy of Phthalylsulfathiazole in Infectious Diseases of the Colon

Name of Disease	Stage of Disease		Results				
	Acute	Chronic	Good	Fair	Poor		
Chronic ulcerative colitis	22	75	20 acute 54 chronic	2 acute 1 chronic	1 acute 2 chronic		
Amebic colitis	1	2					
Bacillary dysentery		2	2 acute 6 chronic	2 chronic			
Giardia lamblia	2	6					
Paratyphoid		2		2 chronic			
Dientameba fragilis	2		2 acute 24 chronic	1 acute 5 chronic	3 acute 5 chronic		
Total number of patients	30	70					

the bacteriostatic activity of succinylsulfathiazole and that it causes no toxic symptoms in man. Because phthalylsulfathiazole exerted a more bacteriostatic effect on the intestinal flora and because smaller doses were required to produce this effect, the new sulfonamide was placed on clinical trial.

This presentation is intended to give the general practitioner an analysis of the new sulfonamide in its application to infectious diseases of the colon. The study entails a careful evaluation of phthalylsulfathiazole in the treatment of 100 patients with infectious and ulcerative lesions of the colon. Chemical concentrations of the drug were determined in the stool and correlated with blood levels and bacteriologic studies.

RESULTS

Clinical Studies.—Of the 100 patients treated, 72 were female and 28 were male; of these 80 had chronic ulcerative colitis, 6 had amebic dysentery, 2 with bacillary dysentery, 8 with *Giardia lamblia*, 2 with paratyphoid and 2 with *Dientameba fragilis*. In table 1, the efficacy of phthalylsulfathiazole is shown. It is important to note that in chronic ulcerative colitis the patients in the acute stage of the disease show improvement comparable to the ones in the chronic group. In amebic colitis our results demonstrate again that sulfonamides have not been efficacious.

The results demonstrated in *Giardia lamblia* and in *Dientameba fragilis*, while favorable, are new in our experience and should be rechecked on a larger group of patients.

Clinically definite improvement is noted in the overall picture in infectious disease of the colon under phthalylsulfathiazole therapy. Of the 100 patients under study, 84 demonstrated good results, 6 show fair results and 10 patients show poor reaction to treatment. In chronic ulcerative colitis cramping in the abdomen subsides within seventy-two hours, the evacuations are reduced in number, the stools show a tendency to become formed and odorless, and the blood in the stool disappears in a few days after intake of the new drug. The patient feels better, eats better and gains weight. The acute fulminating types respond well in that the temperature is reduced considerably in seventy-two hours, the evacuations become less frequent and the tenesmus subsides. Phthalylsulfathiazole has been administered to many of our patients over two, four, six and eight week periods

intermittently without demonstrating any toxic manifestations. Some patients were permitted to remain on a specific dosage for six to nine months without interruption to prove lack of toxicity. The matter of dosage will be discussed subsequently. In general, the patients on this therapy do very well and are in condition to do their work. In addition to the administration of phthalylsulfathiazole the patients under our care receive supportive measures and a controlled diet, so that the standards for study are parallel.

Therapeutic Dosage.—The dosage of phthalylsulfathiazole originally advised was 0.125 Gm. per kilogram of body weight daily (approximately one half that of succinylsulfathiazole. Thus, a patient weighing 150 pounds (68 Kg.) would receive 8.5 Gm. (seventeen tablets) of phthalylsulfathiazole daily. This dosage, in our experience, proved to be detrimental, unnecessary and wasteful, and after chemical studies were made on the blood and stools a dosage of 3 Gm. daily was decided on. On 12 Gm. daily intake the majority of our patients experienced severe cramping, more looseness in the stools and an increase in the number of evacuations.

CHEMICAL STUDIES

Blood Concentration Level.—The blood level studies show that the concentration of the drug in the blood stream ranges from 0.5 to 1.5 mg. per hundred cubic centimeters of blood irrespective of the dose intake. On a small dose it necessarily takes a few days longer before the upper blood levels are approached.

Stool Concentration Level.—Stool concentration tests were made in order to account for the recovery of the drug taken orally. Determinations were made of the amount of the total phthalylsulfathiazole in the entire stool for each day. Results show that about 55 to 65 per cent of the amount of the drug taken orally is recovered in the stool on a dosage of 3 Gm. (table 2).

Urine Concentration Level.—The amount of phthalylsulfathiazole excreted in the urine is equal approximately to 5 per cent of the amount of oral intake. The estimate of drug recovery on the daily oral intake of

TABLE 2—Recovery of Phthalylsulfathiazole in Milligrams for Seven Day Period, Patient J

	Daily Intake 3 Gm.							Per Cent of Recovery
	1	2	3	4	5	6	7	
Urine.....	150	150	150	150	150	150	150	61.9
Stool.....	135	205	2,515	2,021	3,391	1,853	3,112	
Blood.....	57	57	81	81	45	45	45	
Total....	345	365	2,746	2,252	3,786	2,048	3,297	
	Daily Intake 12 Gm.							Per Cent of Recovery
	1	2	3	4	5	6	7	
Urine.....	600	600	600	600	600	600	600	41.9
Stool.....	1,717	1,012	4,840	5,964	5,118	8,216	7,540	
Blood.....	57	51	45	57	45	45	81	
Total....	2,374	1,993	5,485	6,621	6,311	8,861	8,221	

3 Gm. would be 150 mg. and on 12 Gm. intake 600 mg. In tables 2 and 3 is shown an example of a recovery experiment demonstrating the amount of total phthalylsulfathiazole recovered in the urine, stool and the blood stream of 2 patients receiving 3 Gm. and 12 Gm. daily for seven days.

It is interesting to point out that the amount of total drug recovered seldom approaches the amount of oral intake, indicating that a substantial percentage of the drug intake is not recoverable; this may be due to lack of more accurate methods of estimating the

² Poth, E. L., and Ross, C. A. *Federated Press*, 2: 54, 1937.

drug in the excreta or perhaps due to the presence of naturally diazotizable substances in the normal excreta, such as compounds produced by *Escherichia coli* or amino acid groups.

In table 2, patient 1, on a daily oral intake of 3 Gm. of phthalylsulfathiazole, the percentage of drug recovery

TABLE 3.—*Recovery of Phthalylsulfathiazole in Milligrams for Seven Day Period, Patient 2*

Daily Intake 3 Gm.								Per Cent of Re- covery
	1	2	3	4	5	6	7	
Urine.....	150	150	150	150	150	150	150	56.6
Stool.....	1,111	1,166	1,381	1,638	3,275	1,664	1,566	
Blood.....	58	63	45	57	81	58	63	
Total....	1,319	1,379	1,576	1,845	3,506	1,872	1,779	
Daily Intake 12 Gm.								54.5
Urine.....	600	600	600	600	600	600	600	
Stool.....	7,079	3,652	7,128	2,436	8,281	5,460	7,350	
Blood.....	89	61	81	63	58	81	89	
Total....	8,668	4,315	7,809	3,099	9,042	6,141	8,039	

in the stool was 64.9, while in the recovery on the 12 Gm. daily intake the percentage was 41.9.

In table 3, patient 2, the percentage of drug recovery in the stool was 56.6 and 54.5 respectively.

Both tables demonstrate the general tendency of phthalylsulfathiazole to concentrate the drug in the stool to a greater degree on a smaller amount of oral intake. This general trend has been demonstrated many times in our studies.

BACTERIOLOGIC STUDIES

Detailed bacteriologic studies were made on 50 patients having infectious processes in the colon. The studies were directed primarily toward identification, bacterial counts, staining peculiarities and reaction to sugars of the coliform group, the streptococci, the staphylococci and total bacteria.

TABLE 4.—*Bacterial Count of Stools Before and After 3 Gm. of Phthalylsulfathiazole, Patient 1*

Name of Organisms and Counts in Millions (per Gram of Stool)									
Esen. Coli		Streptococci		Staphylococci		Total Bacteria			
Be. Treat- fore ment	After	Be. Treat- fore ment	After	Be. Treat- fore ment	After	Be. Treat- fore ment	After	Be. Treat- fore ment	After
10.0		2.0		3.0		193.0			
1	56.0	1	1.6	1	1.0	1	73.0		
2	36.0	2	1.0	2	...	2	40.0		
3	6.2	3	1.0	3	0.6	3	5.0		
4	0.2	4	1.7	4	1.4	4	3.3		
5	0.24	5	0.3	5	0.2	5	0.8		
6	0.01	6	0.2	6	0.3	6	0.6		
7	0.05	7	0.19	7	0.15	7	0.4		
8	0.02	8	0.1	8	0.06	8	0.2		
Before and After 12 Gm. of Sulfathalidine									
16.4		1.2		3.9		20.0			
1	5.0	1	0.4	1	0.4	1	5.0		
3	2.6	3	0.2	3	0.4	3	4.0		
8	0.4	8	0.1	8	0.4	8	0.1		

These estimations were made before and after administration of phthalylsulfathiazole and were calculated on a unit study of 1 Gm. of stool.

In tables 4 and 5 is shown a bacteriologic study of patients 1 and 2 before and after oral intake of 3 Gm. and 12 Gm. of phthalylsulfathiazole respectively. Studies such as demonstrated in table 4 were made on all patients. (A detailed presentation of all bacteriologic studies is not intended in this publication.) These

figures are representative of all studies made. It is evident that the counts are definitely diminished in *Escherichia coli*, streptococci, staphylococci and total bacteria on 3 Gm. of phthalylsulfathiazole daily, and that, while on 12 Gm. doses daily the bacterial count is diminished more rapidly, it approximates the same level on the seventh or eighth day. Similar findings are demonstrated in table 5.

COMMENT

It is my impression that phthalylsulfathiazole is less toxic and more bacteriostatic than any intestinal agent used previously and that, because it has these properties, smaller doses of this drug may be used to advantage. In our analysis, determinations have been made to show that a daily dose of 3 Gm. taken orally will bring about the desired therapeutic effect in infectious diseases of the colon and that doses of 12 Gm. or more are not essential. Large amounts of phthalylsulfathiazole not only are wasteful but are detrimental.

Patients receiving 12 Gm. of the drug complain of considerable cramping in the abdomen, exaggeration of the liquid consistency of the stool and an increase in

TABLE 5.—*Bacterial Counts of Stools Before and After 3 Gm. of Phthalylsulfathiazole, Patient 2*

Name of Organisms and Counts in Millions (per Gram of Stool)									
Esch. Coli		Streptococci		Staphylococci		Total Bacteria			
Be. Treat- fore ment	After	Be. Treat- fore ment	After	Be. Treat- fore ment	After	Be. Treat- fore ment	After	Be. Treat- fore ment	After
85		3.0		4.0		90			
2	4.8	2	1.0	2	1.0	2	10.0		
4	0.4	4	0.5	4	0.8	4	5.0		
6	0.1	6	0.4	6	0.4	6	4.0		
11	0.1	11	0.6	11	0.6	11	2.0		
Before and After 12 Gm. of Sulfathalidine									
60		1.0		4.0		71.0			
1	8.8	1	0.01	1	1.2	1	0.7		
3	0.5	3	0.07	3	0.2	3	2.4		
8	0.01	8	0.02	8	0.06	8	0.5		

the number of evacuations. In a comparative study made of phthalylsulfathiazole and succinylsulfathiazole one comes to the conclusion that the new sulfonamide is a superior therapeutic agent in colon infections.

CONCLUSIONS

1. Phthalylsulfathiazole is efficacious in colon infections.
2. The new sulfonamide produced no toxic symptoms in 120 patients.
3. A dosage of 3 Gm. daily is preferable to larger amounts.

ABSTRACT OF DISCUSSION

DR. HENRY W. CAVE, New York: My experience with phthalylsulfathiazole, or sulfathalidine, has been in the pre-operative preparation of 120 patients for procedures carried out on the colon and of 10 persons with mild forms of ulcerative colitis, in which haustral markings were still obtained, without pseudopolypoid degeneration or stiffening of the colonic wall. I agree with Dr. Streicher that it is not necessary to give doses of 12 Gm. daily. In these cases I have given 6 Gm. as a rule and have found it sufficient to stop bleeding, diminish cramping and show a decided improvement in the appearance of the mucous membrane of the rectal pouch and the lower sigmoid. I have had no toxic effects from the use of the drug preoperatively except in 2 instances. Three of the 10 patients to whom I have given this newer drug sulfathalidine have had it over a period of one year. They have shown good improvement.

gain in weight, diminution in the amount of diarrhea to one or two bowel movements a day, and are apparently well. The mucous membrane is clear. There have been 4 who have been on the drug for a little more than six months and have shown improvement. Three have been on the drug for four months and have shown improvement; 1 in this last group did have three recurrences but has now straightened away satisfactorily. The group of 10 patients is too small from which to draw any conclusions. But certainly the group of 80 reported by Dr. Streicher have shown improvements which must be taken notice of. This new drug, which is relatively nontoxic, seems to have beneficial effects on infections of the colon. I do not believe the drug is as satisfactory as succinylsulfathiazole in the preoperative preparation of patients, for the movements are not quite as soft and they did not tend to form scybalous masses as with sulfathalidine in the large intestine, which is a hindrance at times in doing a partial resection of the colon.

DR. J. ARNOLD BARGEN, Rochester, Minn: Drugs of the sulfonamide series have been very helpful in the treatment of various inflammatory and infectious intestinal disorders. Such drugs have been administered orally, as retention enemas and by subcutaneous and intravenous routes. The very nature of the intestinal tract made it apparent rather early in our study of these drugs that in order to obtain desired results they would have to be given in large amounts. In the treatment of intestinal diseases the drug should be in actual contact with the intestinal wall continuously, and there should be a minimum of systemic absorption and in turn a minimum of systemic intoxication. The drugs which have answered these requirements best and have done most in the treatment of ulcerative colitis and other infectious intestinal diseases are azosulfamide (neoprontosil), sulfaguandine, succinylsulfathiazole and sulfathalidine. Most of the other sulfonamide compounds, too numerous to mention, were found to be absorbed in too large amounts, when given in effective doses causing in turn too great toxic symptoms, to be adaptable to the treatment of intestinal diseases. Last March I published the results of treatment with sulfathalidine of 37 patients with ulcerative colitis of the streptococcal variety. Our experiences with that group of patients were very similar to those which Dr. Streicher has reported. Since then we have treated at least another 50 patients with this type of colitis, with similar results. The response of at least 70 per cent of these patients to the program of therapy in which sulfathalidine played a prominent role was very good. In the past my colleagues and I have felt that azosulfamide was the drug of choice for the treatment of the streptococcal type of ulcerative colitis. However, a number of patients have had toxic reactions to azosulfamide in the form of erythematous rash, sore throat, chills, fever and the like. It is of interest to note that some of the 37 patients had such reactions and most of them had no similar reactions to sulfathalidine. However, even though toxic reactions to this drug have been minimal in general, and the least common of any of the drugs so far employed, reactions do occur. One of the series, a woman aged 47, had similar reactions to sulfathiazole, succinylsulfathiazole, azosulfamide and sulfathalidine. Another woman, aged 55, had a severe reaction with fever and generalized erythematous rash to succinylsulfathiazole, and a similar reaction to sulfathalidine. By and large, however, when reaction to one of the other drugs occurred, no reaction occurred with the use of sulfathalidine. Furthermore, a good many patients have shown an initial satisfactory response to one of the other three drugs mentioned but the response was not sustained. Such a sustained response promptly occurred by the use of sulfathalidine. We have also used sulfathalidine in the treatment of some cases of recurrent regional ileitis and segmental colitis, with good response in a few. For some years now we have given rather large amounts of succinylsulfathiazole preoperatively for several days to patients on whom intestinal resection has been planned. Occasionally these patients have exhibited rather severe toxic symptoms to the drug. In these cases sulfathalidine has been given without such toxic symptoms or with minimal symptoms. It is important to know that when patients are sensitive to one

drug of the sulfonamide series there is another drug available for a similar purpose with less toxicity and yet good effects in selected cases. It seems from the observations so far available that sulfathalidine is such a drug for use in intestinal disorders. Its toxicity is less, it will frequently be associated with satisfactory results when satisfactory improvement does not follow the use of other drugs or when toxic effects follow their use and finally, as Dr. Streicher has pointed out, smaller amounts of the drug are usually more effective than of any of the other drugs in common use for intestinal conditions.

DR. BERRILL B. CROHN, New York: The experiences of Dr. Streicher with the use of phthalylsulfathiazole in infectious diseases of the colon, particularly with ulcerative colitis, are exceedingly promising. The percentage of reported "good" results, the lack of mortality and the absence of toxicity of the drug exceed the best results published to date. For two years I have used the drug in cases of ulcerative colitis and ileitis. My comments are based on purely clinical conclusions as observed at the bedside, as war conditions have made it difficult to carry out extensive bacteriologic studies. The dosage of phthalylsulfathiazole that I have employed is the same used by the author, namely, 3 to 4 Gm. daily by mouth. The drug was prescribed over long periods without deleterious consequences. It is almost entirely nontoxic, hemolytic anemia has not been observed (in contrast with sulfathiazole), toxic rashes are nonexistent, and no adverse effect is noted on the temperature or the appetite. One case only of mild and transient hepatitis with jaundice was observed, symptoms disappearing within a few days of the discontinuance of the specific therapy. In its clinical efficacy, phthalylsulfathiazole has few advantages over succinylsulfathiazole except a lesser toxicity, but it does not offer any greater, if as great, therapeutic result. Succinylsulfathiazole gives better clinical results, particularly in the more severe and more acute types of cases. The diminution in the fever and in the number of stools may be more gradual but occurs in a larger percentage of cases. Nowhere in my experience with either the phthalyl or the succinyl compound of sulfathiazole have I ever approached such an optimistic picture as reported by the author as 84 per cent of good, 6 per cent of fair and only 10 per cent of poor reactions to treatment in inflammatory conditions of the colon, most of which cases (80 per cent) comprised acute and chronic ulcerative colitis. This last year particularly has been marked by the extreme severity of some of the acute cases, in 2 of which, culminating in character, death occurred in spite of the use of large doses of both varieties of the drug. The chronic ulcerative colitis cases also have been very resistant to forms of therapy. My former, somewhat guarded enthusiasm and advocacy of succinylsulfathiazole in the treatment of colitis continues, but these moderate results are not equaled and surely not surpassed by the newer, more concentrated bacteriostatic effects of sulfathalidine. The best clinical results that I have seen have been in the combined use of the intestinal sulfonamide drugs by mouth, coincident with the employment of acriflavine base 1:4,000 as daily retention enemas. In the combined forms of colitis and ileitis and in the cases of ileitis and ileojejunitis sulfathalidine seems far superior to succinylsulfathiazole, it controls fever, diarrhea and abdominal cramps, and it has a striking effect in bringing about the spontaneous closure of persistent abdominal small fistulas and perirectal abscesses and fistulous tracts.

DR. MICHAEL H. STREICHER, Chicago: The discussions presented by Drs. Cave, Borgen and Crohn are conclusive and add much to this exposition. I concur in the opinion of Dr. Cave that succinylsulfathiazole is more satisfactory than phthalylsulfathiazole in preoperative preparation of patients. It is of interest to know that Dr. Borgen has had favorable experiences with the use of smaller doses of sulfathalidine in ulcerative colitis. The results referred to by Dr. Crohn in alleviating the symptom complex in cases of ileitis, ileojejunitis and ulcerative colitis with sulfathalidine are promising. Discussions such as these are of practical importance and will encourage a more extensive evaluation of the new sulfonamide.

BERYLLIUM POISONING

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PAINESVILLE, OHIO

Beryllium poisoning is an industrial disease that demands attention because of the loss in manpower and the fatalities incident to increased production in the beryllium industry. During the past four years 170 cases of poisoning were seen among workers in three plants producing beryllium, its compounds and its alloys. Manifestations included dermatitis, chronic skin ulcer and inflammatory changes in the respiratory tract, skin and respiratory tract changes occurring concurrently or singly. The severest manifestation was diffuse pneumonitis. This caused the death of 5 patients.

The importance of the beryllium industry during the present war and the anticipated postwar demands for civilian products emphasize the need to know the potential hazards of beryllium production. Of great importance in war production is beryllium copper alloy, which is corrosion resistant, nonrusting, nonsparking and nonmagnetic and has good electrical conductivity, high strength and excessive fatigue resistance. It is used in precision instruments, altimeters, airplane pipe lines, carburetors, telephone switchboards and a host of other articles. Because beryllium is a strategic metal, its availability is governed by strict priority regulations.

In the processing of the ore, beryllium oxide is extracted under high temperatures from the crushed inert ore beryl by concentrated acids and fusion methods. Fumes and dusts of by-products, wherein lie the production hazards, are present at the various stations during the processing.

REVIEW OF THE LITERATURE

Experiments conducted by Fairhall and his associates¹ showed that several beryllium compounds are toxic to animals. Both pneumonitis and dermatitis were produced experimentally. Toxicity was demonstrated for the acid radical of such salts as fluoride or oxyfluoride and for certain hydrolyzed beryllium salts, such as chloride or sulfate. They were unable to establish toxicity for beryllium per se but stressed the fact that local irritation reactions could be produced in animals by the hydrolysis of soluble beryllium salts, regardless of the mode of administration.

In 1933 Weber and Engelhardt² in investigating the effects of beryllium dusts on guinea pigs concluded that lung damage from inhalation was similar to that produced by inhalation of corrosive gases, such as phosgene or chlorine. Fabroni³ coined the term berylliosis for this pathologic condition.

In 1936 Gelman⁴ reported his observations on workers in beryllium plants in Moscow. He termed the

disease poisoning by vapors of beryllium oxyfluoride and described two phases of clinical symptoms. The first phase consisted of chills and fever much like those of metal fume fever. The second phase, which developed in two days or more, was characterized by extensive bronchioalveolitis. In elaborating this report in 1938 Gelman⁵ described roentgenologic changes in the lungs and skin changes. The lung condition was attributed to the action of fluorine, which Gelman thought was separated from beryllium oxyfluoride at the level of the bronchioles and alveoli.

In 1940 Berkovits and Israel⁶ attributed symptoms in a series of 46 cases to beryllium fluoride. They stated that serial roentgenograms were essential in diagnosis and that in some cases roentgenograms did not become normal after symptomatic recovery but showed changes "resembling pulmonary sclerosis."

In addition to our previous communication⁷ Kress and Crispell⁸ recently reported 4 cases of chemical pneumonitis in men working with fluorescent powders containing beryllium.

ETIOLOGY

The specific etiology of beryllium poisoning is unknown, but the pathology findings, the clinical course of the disease and data obtained by others in the investigation of the toxicology of beryllium suggest a chemical reaction as the cause.

In our patients clinical manifestations occurred only after exposure during processing of the ore and cleared completely when proper precautions were observed or when work was terminated. The disease was not limited to men in one type of work or in one phase of production: it occurred in maintenance men, in furnace tenders and in workers with distillation and electrolytic processes. Incidence and severity were proportional to the degree of exposure and chemical irritation of dusts and fumes.

That several beryllium compounds are toxic to animals and that the disease occurs in men working at various jobs indicate that several beryllium compounds may be causative. The acid radical salts, according to Fairhall and his associates,¹ appear more toxic than other compounds and are capable of producing acute reactions. It has not been proved, however, that severe damage may not be caused by beryllium compounds other than the acid radical salts.

DERMATOLOGIC MANIFESTATIONS

The dermatologic manifestations of beryllium poisoning were contact dermatitis and skin ulcer. These manifestations occurred in 42 patients. Frequently the lesions were associated with rhinitis and nasopharyngitis or with other manifestations of beryllium poisoning. In a large percentage of patients the dermatitis occurred within one week of employment. Most patients had contact with beryllium sulfate, beryllium fluoride or beryllium oxyfluoride, which are soluble and, as Fairhall and others have shown, are capable of producing local irritation. Inadequate cleanliness, excessive perspiration and failure to use protective devices were contributing factors.

From the Cleveland Clinic (Drs. VanOrdstrand and Hughes).
1. Fairhall, L. T., and others: Toxicology of Beryllium, *Bull.* 181, National Institute of Health, 1943.
2. Wel, L.: Untersuchung von Stauben f. Gewerbehyg. u. Unfallverhütung, *10:41*, 1935.
3. Fabroni, S. M.: Patologia pulmonare da polveri di berillio, *Med. del Lavoro*, **26:297**, 1935.
4. Gelman, I.: Poisoning by Vapors of Beryllium Oxyfluoride, *J. Indust. Hyg. & Toxicol.* **18:571**, 1936.

5. Gelman, I.: Beryllium, Occupation and Health, Supplement, International Labor Office, Geneva, 1938.
6. Berkovits, M., and Israel, B.: Changes in the Lungs Caused by Beryllium, *Klin. Med.* **18:117**, 1940.
7. Hughes, Robert, and Carmody, M. G.: Workers Extracting Beryllium Oxide, Cleveland Clin. Quart. **10:10**, 1945.
8. Kress, J. E., and Crispell, K. K.: Chemical Pneumonitis in Men Working with Fluorescent Powder Containing Beryllium, *Guthrie Clin. Bull.* **13:91**, 1944.

The contact dermatitis was often severe. The eruption was an edematous, papulovesicular dermatitis with the most severe reaction occurring on the exposed portions of the body, namely the hands, arms, face and neck (fig. 1 *a*). At times there was a great deal of weeping. Itching was intense. Some patients had the sensation of burning.

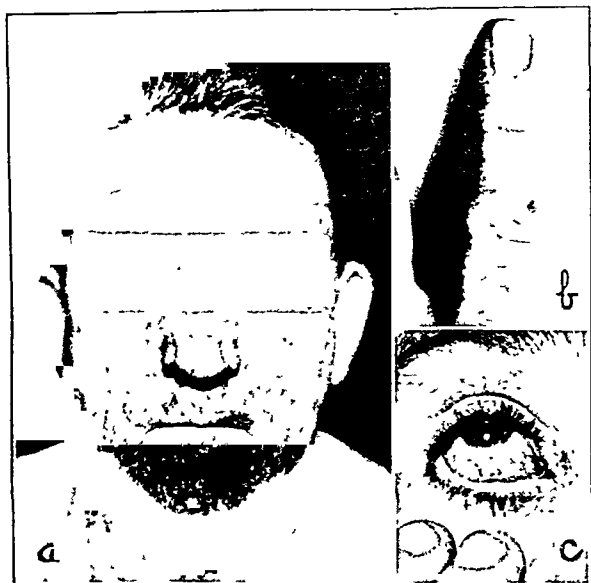


Fig. 1—*a*, contact dermatitis; *b*, contact dermatitis and associated early conjunctivitis; *c*, beryllium ulcer.

After exposure to beryllium had terminated, the dermatitis tended to subside and clear up. Certain local measures were found to be beneficial. Local treatment consisted of moist wet packs of Burow's solution 1 part to 9 parts of water. For less acute cases calamine lotion with 0.5 per cent phenol was used. After the reaction subsided and desquamation began, the topical remedy was changed to boric acid ointment with 0.5 per cent phenol.

Conjunctivitis occurred with "splash burn" or in association with contact dermatitis involving the upper part of the face. Signs and symptoms were similar to those of acid burns or catarrhal conjunctivitis (fig. 1 *b*). No complications nor sequelae were observed, and healing was complete in all cases. Local treatment included the use of boric acid solution, mild zinc and epinephrine in solution, and a salve of holocaine (phenacaine hydrochloride) and epinephrine.

In beryllium ulcer a beryllium crystal was deposited within the skin layers. The lesion developed only after trauma, such as an abrasion or a laceration, and was seen predominantly among beryllium sulfate workers. At this site of trauma the initial lesion, a small indurated papule surrounded by an area of erythema, appeared and later underwent necrosis.

The ulcer occurred on exposed parts, particularly the forearms and hands, and was discrete and as a rule single (fig. 1 *c*). It caused little distress unless infected or located near a joint and subjected to the trauma of motion.

Treatment was early incision of the papule and curettage of the fibrous base. Healing was complete in eight to ten days. If neglected, the lesion persisted until traumatic extrusion of the inclusion center occurred. This center consisted of caseous material

within which the beryllium crystal usually could be identified. Healing would not take place until the embedded crystal was eliminated.

CASE 1.—A man aged 62 began work at the beryllium company as a furnace operator on March 5, 1942. On Dec. 22, 1943 examination showed an infected beryllium ulcer on the first joint, dorsal aspect, of the right thumb. This was excised, and pathologic examination revealed that the ulcer extended through the epidermis and into the reticular stratum of the dermis. At the edge of the ulcer, squamous epithelium extended into the dermis and also for a short distance over the base. In the neighborhood of the ulcer the epidermis showed keratosis, acanthosis and parakeratosis. In the basal layers the nuclei were larger than natural and slightly hyperchromatic, but there was less than the average number of mitotic figures in these cells. The base of the crater of the ulcer was covered by a layer composed of fibrin, fibrinoid material and necrotic tissue, all enmeshing polymorphonuclear leukocytes, lymphocytes and macrophages in various stages of degeneration. There was beginning organization of this exudate, beneath which was a layer of granulation tissue. In the region of the ulcer the dermis was edematous, well vascularized and densely and diffusely infiltrated with polymorphonuclear leukocytes, plasma cells, large mononuclear cells and some eosinophils. Deeper down, beneath the ulcer, the exudate in the dermis was composed mainly of large and small mononuclear cells and occasional plasma cells. In the subcutis the infiltration was mainly of polymorphonuclear leukocytes. No inorganic particles, amorphous or crystalline, suggestive of beryllium, were recognized in the microscopic examination of this tissue.

The diagnosis was subacute necrotizing ulceration and inflammation of the skin of the back of the hand.

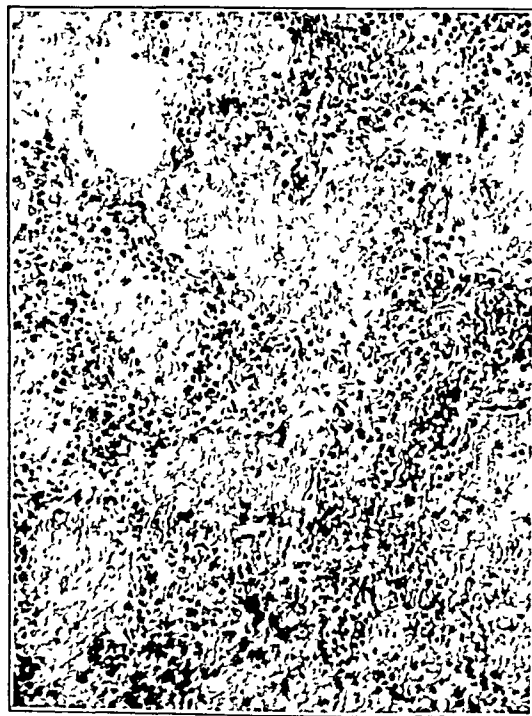


Fig. 2—Pulmonary edema: Fluid in alveoli, enmeshing an occasional large or small mononuclear cell; infiltration of large mononuclear cells and lymphocytes in the interalveolar septum. No polymorphonuclear leukocytes in the exudate.

We have observed that a person with a chemical dermatitis, if allowed to continue this work, may develop chemical bronchitis and pneumonitis. The occurrence of dermatitis in new workers has been used as a rough barometer of individual susceptibility to pulmonary or bronchial irritation.

RESPIRATORY TRACT MANIFESTATIONS

Ninety patients were seen with chemical nasopharyngitis and/or chemical tracheobronchitis.

Chemical nasopharyngitis occurred principally among tenders at furnaces where hydrous beryllium sulfate was ignited to produce beryllium oxide and where

As did nasopharyngitis, chemical tracheobronchitis occurred predominantly in furnace tenders. Notable exceptions, however, were general helpers or maintenance men. It was characterized by (1) cough, (2) rales in both lungs and (3) normal serial roentgenograms. The commonest complaint was cough, non-productive except for occasional blood-streaked mucoid sputum. Symptoms of nasopharyngitis were usually concurrent, and in addition some patients had anorexia and weight loss. About one half had mild dyspnea.

Rales, characteristically present in the early phase of inspiration over the lower lung fields, were fine early in the disease and later became coarse. Vital capacity was reduced. There was an occasional low grade fever, although the temperature was never elevated more than 1 degree and chills were never associated. Vital capacity was reduced as much as 30 per cent in some cases in which there was subjective dyspnea.

Before the symptoms would subside, it was found that the patient must be removed from exposure and that work of any kind must be prohibited. Working during this illness proved dangerous, regardless of whether the job was changed or continued at the same station with the use of an air mask. Before complete rest was made mandatory, it was found either that recovery of a patient was delayed or that the patient developed a true pneumonitis.

For similar reasons the patient was not permitted to return to work until chest findings were normal, even though he was symptom free.

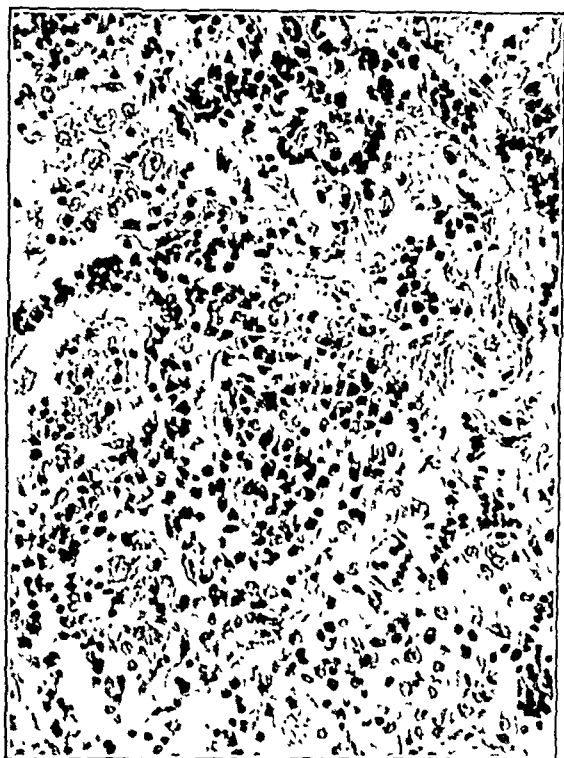


Fig. 3.—Lobular pneumonitis: Plasma cells, lymphocytes and large mononuclear cells in alveoli and interalveolar septa. Note striking absence of polymorphonuclear leukocytes.

anhydrous beryllium fluoride and magnesium were used in the production of pure beryllium metal.

Irritation of nasal and pharyngeal mucous membranes varied in degree. The chief complaint made by these patients was soreness of the nose and throat associated with mild epistaxis, manifested by blood clots being blown from the nose. Some patients also complained of a peculiar metallic taste. As a rule, cough was not present.

There was diffuse swelling of mucous membranes with considerable hyperemia. Epistaxis was secondary to vascular engorgement in the nasal mucosa. In some untreated cases fissures occurred and persisted for two months. The patients were afebrile, and chest and laboratory findings were normal.

Treatment of chemical nasopharyngitis was primarily prophylactic. Exposure was avoided by use of an air mask or by termination of employment. Saline irrigations and liquid petrolatum nose drops afforded symptomatic relief. Most cases cleared in three to six weeks.

CASE 2—A man aged 22, employed as furnace tender for ignition of hydrous beryllium sulfate, was seen on Sept. 14, 1943 complaining of the nasopharyngeal symptoms and the objective findings described. Seventy-two hours after treatment was instituted, symptoms and objective findings cleared. Six weeks later he had a recurrence resulting from the use of a faulty air mask. Symptoms promptly subsided when a new mask was secured.

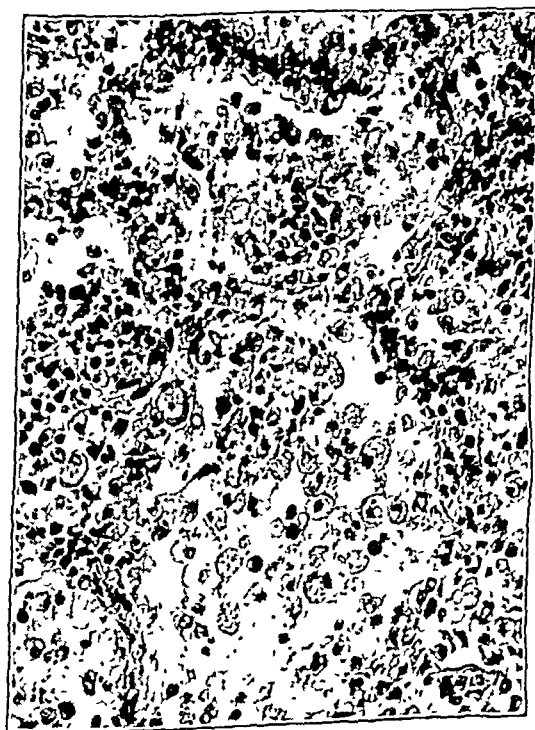


Fig. 4.—Lobular pneumonitis. Large mononuclear cells with granular or foamy cytoplasm, some plasma cells and occasional lymphocytes within alveoli and in interalveolar septa.

The chest was examined roentgenologically each week for three weeks after onset of the disease. No case of pneumonitis developed after this period. The illness lasted from seven to twenty-one days. Supportive measures were used for symptomatic relief.

CASE 3.—A man aged 25 was seen on Sept. 14, 1943 complaining of intractable cough and nasal irritation of five days' duration. He frequently coughed up traces of blood, complained of a "metallic taste" and had anorexia with a 4 pound (1.8 Kg.) weight loss. There were a slight elevation in temperature (99.4 F.), moderate injection of the nasopharyngeal mucosa



Fig 5.—Lobular pneumonia: Beginning organization. Fibroblasts replacing intra-alveolar and interalveolar exudate of plasma cells, lymphocytes and large mononuclear cells.

and numerous fine inspiratory rales over the lower lungs. Vital capacity was 3,400 cc., 1,000 cc. below the computed normal. On roentgenologic examination the chest was normal.

During the two weeks in which he was away from work and on a modified rest regimen, his symptoms subsided, auscultatory findings disappeared and vital capacity returned to normal.

Chemical pneumonia developed in 38 workers on many different jobs; no one station could be isolated as the source of exposure. It represented the severest form of this industrial disease and progressed without exacerbation or remission either to complete recovery or to death.

Symptoms were (1) cough with occasional blood-streaked sputum, (2) substernal burning pain, (3) shortness of breath, (4) cyanosis in most cases, (5) abnormal taste, (6) anorexia with some weight loss and (7) increasing fatigue.

In each instance the onset was insidious and was characterized by dry cough and occasional dull substernal burning pain. The pain tended to disappear after one or two weeks, but the cough progressed in severity with expectoration of a small amount of blood in almost every case. Within a few days or a week after onset of cough, these patients complained of dyspnea on exertion. This dyspnea was progressive, became severe even at complete rest, was frequently associated with cyanosis, and in varying severity lasted from two to five weeks. During this time the respira-

tory rate ranged from 26 to 40 per minute. Anorexia as well as weight loss of 5 to 14 pounds (2.3 to 6.4 Kg.) occurred in every case. In contrast with the severity of symptoms the temperature was often normal and was rarely elevated more than 1 to 2 degrees in patients who recovered. The last symptoms to disappear with recovery were cough and effort dyspnea. Duration of the disease from inception to complete recovery varied from five weeks to four months.

Dominant physical findings were rapid pulse, rales over both lungs and reduced vital capacity. Within a few days to a week after onset of the disease, a few fine rales could be heard during inspiration over both the anterior and the posterior aspect of each lung base. As the disease progressed, the rales increased in number, became medium to moderately coarse and were heard throughout both lung fields. Vital capacity was reduced to as low as 2,000 cc.

Signs of infection were conspicuously absent: Temperature was not greatly elevated except in the terminal stages of the fatal cases, the erythrocyte sedimentation rate was essentially normal, and blood counts and blood chemistry were also normal. In 2 patients bronchoscopy showed a hyperemic mucosa with some edema, and in 1 of these a diffuse patchy exudate was present in the lower tracheobronchial tree. Aspirated secretions from these 2 patients and expectorated secretions from others were negative on bacteriologic study for pathogens. Blood oxygen tension was not determined in any case.



Fig 6.—Pneumonia: A focus showing beginning organization. Squamous metaplasia of lining epithelium of alveolus and terminal bronchiole.

Roentgenologic changes in the lung fields did not usually appear until two to three weeks after the onset of symptoms and physical signs. Changes were bilateral and diffuse in all cases and varied with the severity of the disease. In order of appearance the changes were (1) diffuse haziness of both lungs, (2) development of

soft irregular areas of infiltration with prominence of peribronchial markings, (3) absorption of soft infiltration and appearance of discrete large or small conglomerate nodules scattered throughout both lung fields and (4) clearing of the lung fields after one to four months. It is important to emphasize that clearing of



Fig 7 (case 4).—*a*, normal appearance on routine chest examination made in 1941 before patient worked in beryllium industry. *b*, diffuse infiltration of both lungs twenty six days after onset of illness.

the lungs on roentgenologic examination occurred as a rule before complete subsidence of symptoms or disappearance of all physical signs.

Beryllium Content of Lungs

Case	Duration of Exposure	Mg. of Beryllium per 10 Gm. of Tissue		Type of Work
		Wet	Dry	
6	10 mo.	0.33	1.89	Beryllium copper production and general repair
7	40 days	0.03	0.19	Beryllium copper production
9	Indefinite	0.04	0.20	Chemist and metallurgist

Necropsies on 5 patients showed atypical pneumonitis. The pathologic findings were similar in all cases. Significant changes were found only in the lungs, which were grossly heavy (1,100 to 1,380 Gm. each). Striking features in lung tissue sections in all cases were large numbers of plasma cells, relative



Fig 8 (case 4).—*a*, complete clearing of lungs demonstrated approximately one hundred and twenty one days after onset of pneumonitis. *b*, recurrent pneumonitis: appearance four weeks after onset of second attack.

absence of polymorphonuclear infiltration, diffuse pulmonary edema and hemorrhagic extravasation. Fibroblasts with evidence of organization were present, although in patients who recovered no fibrosis was evident on roentgenologic examination of the chest.

Representative microscopic sections of lung tissue, illustrating pathologic findings in chemical pneumonitis, were selected and reported by Dr. Harry Goldblatt of Western Reserve University (figs. 2, 3, 4, 5 and 6).

Chemical analysis of the lungs for beryllium content was made in 3 cases by Dr. Lawrence T. Fairhall and disclosed the amounts given in the accompanying table.

Oxygen and rest were the most beneficial therapeutic measures. Oxygen was administered intermittently by mask or continuously by tent, depending on the severity of dyspnea and cyanosis. Bedrest was found to be most important during the acute phase to prevent acute pulmonary edema, as was restriction of the patient's activity until all signs and symptoms disappeared. Relapse or recurrence was secondary to precipitous activity, such as working about the house. Under such conditions reexposure was not necessary to cause a relapse. Other therapeutic agents, such as aminophylline, hypertonic glucose, and calcium gluconate, were of doubtful value.

Two cases of recovery from chemical pneumonitis and 5 fatal cases are presented to illustrate (1) occurrence of the disease in workers at different jobs, (2) recurrence of the disease after reexposure (case 4), (3) variability of the roentgenologic appearance of the lungs, (4) the importance of rest and (5) pathologic findings.

CASES OF RECOVERY

CASE 4.—A man aged 55, a general helper and worker at various stations in the beryllium plant, was seen on May 3, 1942 complaining of anorexia, shortness of breath and cough of twenty-six days' duration. He initially experienced substernal burning pain, and his cough was nonproductive except for slight hemoptysis.

There were mild cyanosis, shallow respiration, fine to medium rales on inspiration scattered throughout the lungs but most pronounced in the lower two thirds, and a reduced vital capacity (2,400 cc., computed normal 4,500 cc.). The patient had lost 8 pounds (3.6 Kg.).

Stereoroentgenograms of the chest showed extensive infiltration throughout both lungs with nodular configuration below the right clavicle (fig. 7). The heart was normal in size, shape and position, and the aorta appeared normal.

Bronchoscopy disclosed only generalized hyperemia of the tracheobronchial mucosa. A minimum of rather frothy secretion was aspirated and was negative on smear and culture for all pathogens. Expectored sputums were likewise negative. Blood counts and other laboratory tests were normal. A diagnosis of chemical pneumonitis was made.

With bedrest, symptoms disappeared in two months, and final roentgenologic examination of the chest showed no residual pathologic condition (fig. 8*a*). Vital capacity returned to normal, 4,500 cc. The patient was discharged and advised to secure different employment.

The patient was again seen on Nov. 12, 1942 complaining of the same symptoms of three weeks' duration. He had returned to work as a general helper but had avoided working around beryllium oxide. Examination revealed a recurrence of chemical pneumonitis (fig. 8*b*). This second illness was nearly fatal, lasted five months and was complicated by bacterial (pneumococcal) pneumonia and phlebitis. He required pro-

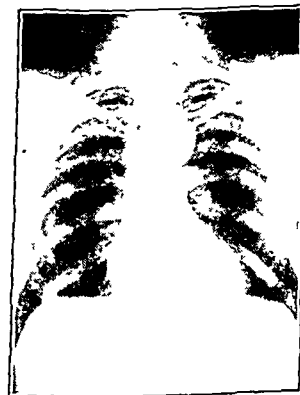


Fig 9 (case 4).—Essentially normal chest survey film made five months after onset of second attack.

longed oxygen therapy. Recovery from the second attack was complete (fig. 9).

CASE 5.—A woman aged 39 was admitted to the hospital ten weeks after beginning work with the complaints of chest pain, shortness of breath, loss of appetite, loss of 14 pounds (6.4 Kg.) and fatigue. For eight weeks she had worked in the department where beryl ore was melted and had helped repair a beryllium fluoride furnace immediately adjacent to her regular station. Seven weeks after she began to work an insidious cough developed and was progressive.

Temperature was normal, respirations were rapid (35 per minute) and shallow, mild cyanosis was present, and fine rales were heard throughout both lungs on inspiration.

A diagnosis of pneumonitis was confirmed by roentgenologic examination. Roentgenograms demonstrated an atypical nodular infiltration, which resembled pneumoconiosis (fig. 10 *a*). The patient remained in the hospital seven weeks. Her temperature remained normal. Treatment consisted in supportive therapy and oxygen to control dyspnea and cyanosis. Recovery was complete, and follow-up study showed entire clearing of the lungs (fig. 10 *b*).

FATAL CASES

Of the 38 patients with chemical pneumonitis 5 died. In all cases the clinical symptoms and physical findings were similar. Evidence of upper respiratory tract involvement was present, physical findings were those described, and laboratory reports were essentially normal.



Fig. 10 (case 5).—*a*, diffuse atypical nodular infiltration, resembling pneumoconiosis; *b*, complete clearing of lungs seven weeks after onset of pneumonitis.

CASE 6.—A man aged 48, who worked in the beryllium copper department on production and general repair for ten months, was admitted to the hospital on Jan. 20, 1943 after stopping work because of cough, shortness of breath and substernal pain. Symptoms were of three weeks' duration, had begun insidiously and were progressive. The temperature was normal. There were rales throughout the chest, rapid and shallow respirations, severe dyspnea and moderate cyanosis. Roentgenologic examination confirmed the diagnosis of pneumonitis (fig. 11). Despite continuous oxygen therapy by tent and supportive treatment the patient died on the sixty-second day of his illness.

CASE 7.—A boy aged 18, who worked on production in the beryllium copper department for forty days, was admitted to the hospital on May 19, 1943 four days after stopping work because of cough, shortness of breath and substernal burning pain. Symptoms were of one week's duration and were progressive. After admission severe dyspnea and cyanosis developed, and respirations became rapid and shallow. Oxygen and supportive therapy were not effective, and the patient died on the forty-fourth day of his illness. Physical findings and roentgenograms of the chest confirmed the diagnosis of pneumonitis (fig. 12).

CASE 8.—A woman aged 35 worked in the grinding department for forty-nine days. She attributed her illness to "sulfuric acid fumes." She was admitted to the hospital on June 22, 1943, thirteen days after stopping work because of cough, severe dyspnea and cyanosis. Symptoms were of fifteen days' duration. Physical findings and roentgenograms of the chest were typical of pneumonitis. Despite intensive oxygen therapy and supportive measures the patient died on the twenty-first day of her illness. Only one roentgenogram of the chest was made because of the severe symptoms. This film, which is not available for reproduction, showed a diffuse early pneumonitis.

CASE 9.—A man aged 42, a founder of one of the beryllium plants and a chemist and metallurgist, entered the hospital on April 18, 1943. One week previously he complained of sore throat, intermittent low grade fever (99.6 F.) and blood-streaked sputum. On admission his temperature was 101 F. Respirations were 26 per minute. The nasopharynx was reddened, and a few crepitant rales were heard during inspiration over both lung bases. Roentgenologic examination of the chest showed some haziness over both lower lung fields. Blood count and sputum examinations were normal. A tentative diagnosis of atypical pneumonia was made.

Chemotherapy, which had been prescribed at home, was continued in the hospital for several days. Cough, shortness of breath and mild cyanosis developed. Chemotherapy was discontinued, and the temperature returned to normal. On the basis of the roentgenologic and clinical findings a revised diagnosis of chemical pneumonitis was made. The patient's progress was satisfactory, and after twelve days he insisted on leaving the hospital. Roentgenograms showed some clearing of the lungs, and respiratory symptoms had subsided considerably.

The patient did not remain in bed and two days later suffered an acute attack of pulmonary edema. He was readmitted to the hospital with severe cyanosis, fever (103 F.) and severe dyspnea. He died two days later, sixteen days after onset of the illness.

This report stresses the importance of complete rest during the course of chemical pneumonitis. Despite initial improvement, early exertion precipitated a fatal



Fig. 11 (case 6).—Diffuse pneumonitis five and one-half weeks after onset of symptoms. Disease progressive and followed by death on sixty-second day of illness.



Fig. 12 (case 7).—Diffuse pneumonitis three weeks after onset of illness. Death occurred on forty-fourth day of illness.

attack of acute pulmonary edema. Roentgenograms of the chest showed initial improvement; later roentgenograms were not obtained.

CASE 10.—A man aged 42, a general process worker, was the first patient observed by us with chemical pneumonitis in the beryllium industry. He was admitted to the hospital on Dec. 30, 1940 with cough, shortness of breath, blood-tinged sputum and cyanosis. Symptoms began insidiously three weeks previously and were progressive. The temperature was 99.2 F., respirations were rapid (44 per minute) and shallow, coarse rales were heard throughout the lungs and moderate cyanosis was present. Roentgenograms showed a severe diffuse pneumonitis (fig. 13). His temperature remained below 100 F. until two days before death, when it rose to 104.5 F. He died on the twenty-seventh day of his illness.

The original necropsy report was of acute organizing atypical bronchopneumonia, bilateral, and slight dilatation of the right antrum and right ventricle. Microscopic lung sections were reviewed by Dr. Harry Goldblatt, in whose opinion the findings were consistent with those of chemical pneumonitis.

PROPHYLAXIS

Elimination of fumes and dusts at all stations is necessary to control the disease. Of equal importance is prevention of accumulated dusts on floors and rafters.



Fig. 13 (case 10) —Severe diffuse pneumonitis. Death occurred on twenty seventh day of illness.

In all three plants the incidence dropped considerably after proper exhaust fans were used to remove fumes, after protective shields were placed around furnaces and after general housecleaning measures were strictly observed. Protective clothing, air masks and even gas masks were also instituted for those directly concerned with the processing. These measures were installed in these three plants

with the help of Major Leggo of the Ohio State Department of Public Health and with the cooperation of the management. The results indicate that preventive measures can control the disease.

Dermatitis and skin ulcer have been prevented by preemployment instruction as to hazards, use of protective devices and clothing, and personal hygiene. All workers are encouraged to report promptly any minor injury, symptom or lesion.

COMMENT

The problem of beryllium poisoning may become more significant with the development of this industry. It is important that potential production hazards be recognized and precautions taken for the control of dusts and fumes.

The specific etiology of beryllium poisoning is not known. Apparently manifestations can be caused by several beryllium compounds, severity of symptoms being dependent on amount of exposure, toxicity and concentration of the substance, and possible individual

sensitivity. In this study patients employed in the sulfating and the oxyfluoride process showed the highest incidence of the disease. The chemical nature of this poisoning is indicated by its occurrence at work, absence of appreciable fever, normal sedimentation rate, normal blood studies and failure to demonstrate any pathogens on examination of bronchial secretions. Recurrence of pneumonitis on reexposure occurred in 1 patient, and until more is known about the control of this disease all such patients should be advised to change their work.

Preventive measures have been very successful in controlling the incidence of the disease. Prophylaxis has been the largest factor in diminishing the morbidity and eliminating the mortality in the last two years. Safety clothing, masks, adequate ventilation and properly protected equipment have proved of value in the prevention of beryllium poisoning.

The evidence on which a diagnosis of chemical pneumonitis is made includes (1) a history of exposure to fumes and dusts arising in the production of beryllium, (2) decrease in vital capacity, (3) dyspnea and in advanced cases cyanosis, especially in chemical pneumonitis, and (4) roentgenologic findings of edema or soft irregular areas of infiltration.

The most important single factor in the treatment of beryllium poisoning is avoidance of further exposure to beryllium fumes and dusts. Sulfonamide drugs were of no benefit in the few early cases of pneumonitis in which they were tried. Calcium gluconate and aminophylline were used in many cases of pneumonitis with questionable benefit. In the presence of dyspnea and cyanosis rest was found essential and oxygen of considerable value. Complete bedrest was regarded as being mandatory in all cases of pneumonitis. No work was permitted until all signs and symptoms of the disease had disappeared. No sequelae or disability could be demonstrated in any of the patients who recovered. All patients who recovered became symptom free, vital capacities returned to normal, and roentgenograms demonstrated clearing of the lungs.

SUMMARY

A disease entity has been encountered in workers in the beryllium industry. In three plants in the Cleveland area 170 workers have been affected by dermatologic and/or respiratory tract manifestations of the disease. When the respiratory tract is involved, the disease may progress to a symptom complex resembling chemical pneumonitis, which caused the death of 5 workers.

Psittacosis.—Apart from parrots and cockatoos, the only other group of wild birds known to be infected in nature are the fulmar petrels (*Fulmarus glacialis*) of the Faroe Islands in the North Atlantic. The young of these birds are an important source of food for the Islanders, and during the months of August and September a considerable proportion of the population is engaged in capture and preservation of the fledgling birds. In September 1933 an epidemic of pneumonia involving 71 persons, with 8 deaths, first called attention to the possibility of psittacosis being involved. In each subsequent year to 1937, numbers of cases ranging from 13 to 35 were recognized, and in 1938 the condition was definitely shown to be psittacosis by the isolation of virus both from human autopsy material and from young fulmars and by positive complement fixation tests with patients' serum—Burnet, Frank MacFarlane: *Virus as Organism*, Cambridge, Mass., Harvard University Press, 1945.

Special Article

UNTOWARD REACTIONS ATTRIBUTABLE TO ATABRINE

Army experience in all malarious theaters has shown atabrine to be extremely valuable for the suppressive treatment of malaria. Untoward reactions possibly attributable to the drug have been few, considering the large numbers of men who have been taking it and the long periods during which it has been administered. In no instance have reactions been of sufficient consequence to warrant discontinuance of the drug in a military organization or in a geographic area. As a rule, minor unpleasant reactions, such as intestinal disturbances, which not infrequently occur within the first few suppressive doses of atabrine, disappear in a few days when the drug is continued.

In the latter part of 1943, medical officers in the Southwest Pacific Area called attention to a characteristic cutaneous syndrome which was occurring in soldiers who had been evacuated from New Guinea and adjacent islands. Lieut. Col. Charles Schmitt and Major Thomas Nisbet, dermatologists stationed with general hospitals in that area, were the first to submit to the Surgeon General official reports in which they described the disease and its probable causation. Lieut. Col. John Ambler, consultant in dermatology in the Southwest Pacific Area, compiled valuable data on all of the pertinent aspects of the disease and summarized the experience of all the medical officers in the theater who had submitted verbal and written reports. Major A. M. Harvey and his associates conducted important investigative work which contributed valuable information on the primary etiologic factor. Essentially, later reports made by medical officers in this country as well as in other theaters have confirmed the observations which were included in these early reports from the Southwest Pacific Area, where the disease was first recognized. Later on, similar cases were reported from all the other theaters where suppressive atabrine medication was in general use as a control measure for malaria. This syndrome has been observed most frequently in New Guinea and adjacent islands and in Assam and North Burma; in other areas only small numbers of cases have occurred.

In brief, this skin disease, which has acquired the name "atypical lichen planus," is characterized by various combinations of the following types of lesions: violaceous and erythematous hypertrophic lichenoid papules and plaques, frequently with a rough verrucous surface; violaceous and erythematous, oozing or scaling eczematoid plaques well demarcated in some cases and ill defined in others; flat squamous geographic plaques on the trunk, axillas and groins similar to tinea lesions; white, sometimes violaceous tinged, slightly elevated

mucous membrane lesions identical with those seen in typical lichen planus; oozing intertriginous dermatitis in the groins, axillas and posterior surface of the ears; ecthymatous lesions; scaling and superficial fissuring of the lips, and scaling erythematous eczematoid dermatitis of the eyelids. In some cases the lesions are predominantly lichenoid, in others most of the plaques are eczematoid. Almost all patients have both violaceous hypertrophic lichenoid plaques and some form of cutaneous eczematoid reaction. During the course of their disease a considerable number of these patients have acute, "explosive" generalized exacerbations manifested by oozing eczematoid dermatitis having a predilection for the flexors, groins, axillas, extremities and neck. Such exacerbations resemble exfoliative dermatitis, and a few of these patients may develop a secondary exfoliative dermatitis which is as severe as the cases of primary exfoliative dermatitis. The seriousness of such a state and the need for expert management of these patients cannot be overemphasized.

Usually the disease is characterized by onset of localized violaceous or erythematous eczematoid plaques on the dorsal surface of the hands or feet, lateral surface of the neck or elsewhere, followed by generalization of the lesions with subsequent appearance of the lichenoid plaques and mucous membrane lesions. The distribution of the lesions is variable. Any part of the cutaneous surface may be involved, but there is a predilection for the legs, forearms, dorsal surface of the hands and feet, face, buttocks, V of the neck, genitalia, mucous membranes of the mouth, eyes and eyelids. Residual effects and lesions which develop in many cases later in the course of the disease include atrophy, hyperpigmentation (melanin) and depigmentation, diffuse follicular accentuation over the upper part of the back, shoulders and extremities, changes in the nails, moth-eaten patchy alopecia and disturbance in the sweating function.

For practical purposes it is necessary to describe, along with the syndrome just described, a characteristic type of eczematoid dermatitis which also has occurred in persons taking suppressive atabrine. This skin disease is characterized by bilateral symmetrical violaceous tinged, vesicular, eczematoid and oozing plaques involving the hands, arms, feet, legs and sometimes other parts of the body. Secondary pyogenic infection is common. The nail bed and skin of the nail folds are usually involved, frequently resulting in exfoliation of the nails without true suppurative paronychia. With experience, on clinical grounds one can in most cases distinguish between this eruption and other forms of eczematoid dermatitis. Tentatively the term "symmetrical eczematoid dermatitis" has been used to differentiate this disease from other forms of eczematoid dermatitis.

It does seem advisable to make a sharp distinction between the so-called "atypical lichen planus" and the "symmetrical eczematoid dermatitis" syndromes. From a broad point of view it would seem that all these patients have either a lichenoid cutaneous reaction or an eczematoid cutaneous reaction or the combination of the two types. A small percentage of the total group have lichenoid lesions alone, a larger group have a combination of lichenoid and eczematoid lesions and a still larger group have eczematoid lesions which are not accompanied by lichenoid lesions.

This article is printed simultaneously in the Bulletin of the U. S. Army Medical Department. It concerns cutaneous reactions attributable to the use of suppressive atabrine, especially the so-called "atypical lichen planus" syndrome. Contributions are appearing in medical periodical literature on the subject. The report represents the views of a considerable number of army medical experts who have seen the condition in many different areas. It was prepared by Major Clarence S. Livinsgood (consultant in dermatology) and Col. Francis R. Dietrich, (chief, Tropical Disease Treatment Branch) Medical Consultants Division, Office of the Surgeon General.

The regular occurrence of specific types of cutaneous reactions such as the lesions aforementioned renders it necessary to consider one or more drugs as the essential etiologic factor. It is a well known fact that some types of skin changes are more frequently attributable to drugs than are others and that certain drugs have a special capacity to produce characteristic reactions. Thus, cutaneous sensitivity to sulfathiazole usually results in skin lesions characteristic of toxic erythema, erythema multiforme and erythema nodosum; bromides tend to produce acneiform eruptions and ecchyma-like or ulcerative dermatoses; arsenicals produce localized and generalized eczematoid eruptions and exfoliative dermatitis as well as many other types of lesions; quinine has a tendency to produce eczematoid eruptions and exfoliative dermatitis. This list could be extended almost ad infinitum because causal drugs and the dermatologic manifestations which they produce are encountered in almost limitless numbers and varieties.

The following general principles in regard to drug eruptions are included here because they are pertinent to the lichenoid and eczematoid cutaneous reactions under discussion: (a) in the majority of drug eruptions the untoward effects are due to a peculiar susceptibility or allergy on the part of the skin of the particular individual; (b) the cutaneous changes elicited by drugs may range from mild pruritus to severe and sometimes fatal eruptions; (c) if a drug eruption is suspected, all drugs not essential to the patient's health or life should be discontinued; (d) improvement following removal of the causal drug may not occur for several weeks; (e) many patients may have periods of refractoriness, during which exposure to the causal drug does not reproduce the symptoms; (f) it is important to examine all patients with drug eruptions for damage to the hemopoietic system, liver and kidneys; (g) patients who have had cutaneous reactions to drugs, especially eczematoid lesions, are likely to have similar reactions to other related drugs or even other allergens, both endogenous and exogenous; (h) skin tests usually are of little or no value in the attempt to discover the causal drug, although the use of patch tests in purely eczematous eruptions may be an exception.

In regard to the lichenoid and eczematoid reactions under discussion, reports of general army experience available at the present time indicate that atabrine is the essential etiologic factor (reported first by Lieut. Col. Charles Schmitt and Major Thomas Nisbet). The mechanisms resulting in the lichenoid reaction and the eczematoid reaction are probably different. For example, it has been observed in one carefully controlled series of cases at Moore General Hospital (Major James Bazemore, Capt. Herbert Johnson, Capt. Elmer Swanson and Col. Joseph Hayman) that the time interval preceding exacerbations of eczematoid lesions is much shorter than is the case with the lichenoid lesions. The fact that the incidence has been so very much higher in New Guinea and adjacent islands and in Assam and North Burma suggests that climatic or geographic factors may play a contributory role in the causation. There is evidence which indicates that various forms of cutaneous trauma may contribute to the onset and localization of the lesions, particularly the eczematoid phase of the eruption. The sequence of events in many cases suggests that persons taking suppressive atabrine have a tendency to acquire chronic eczematoid dermatitis on contact with external allergens (such as certain

jungle plants) rather than self-limited contact dermatitis, which is the usual course of events. It appears that cutaneous reactions are more frequent in persons who have been taking atabrine in doses above the recommended suppressive amount (0.7 Gm. per week). It should be emphasized that the incidence of these cutaneous diseases has been relatively low, even in New Guinea. From the military point of view it has not constituted an important handicap.

In view of the fact that available evidence indicates that we are dealing with one complex, it is suggested that it would be best to group these cutaneous reactions attributed to atabrine under the one heading "atabrine dermatitis complex" and classify the various manifestations as follows:

a. Lichenoid dermatitis. b. Lichenoid and eczematoid dermatitis (a and b include cases heretofore referred to as "atypical lichen planus").

c. Eczematoid dermatitis (includes cases heretofore referred to as "symmetrical eczematoid dermatitis").

d. Exfoliative dermatitis secondary to a, b or c.

The treatment of these conditions depends for the most part on early recognition of the trouble and discontinuation of atabrine. In many instances it is difficult to decide whether or not a given case of eczematoid dermatitis is due to atabrine. It is necessary to study such cases carefully, with careful observation after withdrawal of atabrine and possibly cautious trial readministration of the drug (do not attempt readministration of atabrine to a patient who has had exfoliative dermatitis or a severe generalized eczematoid exacerbation). It is necessary to keep in mind the general principles in regard to drug eruptions which were previously outlined. When possible, such patients should be seen by a competent dermatologist and every effort should be made to rule out other etiologic factors. Parenteral administration of penicillin is indicated in patients with secondary pyogenic infection. Local treatment should be bland and nonirritating and should consist of preparations such as 1:9,000 potassium permanganate soaks, Burow's solution soaks, 5 per cent aqueous solution of tannic acid spray for oozing intertriginous sites and application of borated cold cream if a grease is indicated. Preparations such as salicylic acid ointment, tincture of iodine and sulfonamide ointments should not be used. Arsenicals and bismuth have been tried in some cases without affecting the course significantly; they should not be used. Superficial x-ray therapy, if indicated, should be used only under the direction of a competent dermatologist and in small doses (not more than 75 roentgens and not to exceed a total of more than 375 to 450 roentgens). At least some of these patients have some degree of light sensitivity. Therefore, exposure to sunlight should be avoided and ultraviolet light therapy should not be used. All patients should be studied from the general medical point of view, including studies of blood, serum proteins and liver function. Therapeutic agents such as plasma, liver extract, multiple vitamins and intravenous glucose should be used when indicated.

The prognosis varies from one person to another. In general it seems excellent, especially if the patient is hospitalized early in the course of the disease and the therapeutic measures outlined are initiated promptly. The lichenoid lesions disappear slowly, but they do not tend to recur; the eczematoid phase of the erup-

tion may disappear rapidly, but it tends to recur and is responsible for the prolonged disability which occurs in some cases. In general, recovery is a matter of weeks and months.

Residual hyperpigmentation, depigmentation and atrophy at the sites of lesions become less pronounced as time goes on and the hypohidrosis which occurs in many patients also improves spontaneously. The course is usually prolonged in all cases of exfoliative dermatitis because of frequent exacerbations. It should be noted that these patients have not been followed for a sufficient length of time to justify final statements in regard to the prognosis of these cutaneous reactions.

Another major type of cutaneous reaction which has been attributed to atabrine is primary exfoliative dermatitis not secondary to the lichenoid-eczematoid syndrome. This is characterized by acute fulminating exfoliative dermatitis, demonstrably associated with true hypersensitivity to atabrine. It is in every respect similar to exfoliative dermatitis due to other agents such as arsenicals. This type of cutaneous reaction to atabrine is believed to be associated with atabrine much less commonly than with quinine. Hypersensitivity of this degree constitutes a dangerous state in either instance.

In rare instances aplastic anemia, other severe blood dyscrasias (such as agranulocytosis) and severe acute hepatitis have occurred in association with the lichenoid-eczematoid syndrome and with exfoliative dermatitis. Similar cases have also been observed rarely in persons taking atabrine who do not develop skin disease. Attention is called to the fact that the fatality rate in these cases of aplastic anemia and of hepatitis has been almost 100 per cent. The relationship between this condition and the skin disease is not clear, but the association is striking. (As regards hepatic disease, in areas where infectious hepatitis is common the exclusion of this infection may be extremely difficult.)

Bluish pigmentation deposits of characteristic distribution involving the hard palate, nail beds, epiglottis and tracheal rings, and rarely other parts of the body, also have been reported in patients who had been taking suppressive atabrine for long periods of time. It is not thought that this bears any relation to the lichenoid-eczematoid reaction, although the two conditions sometimes occur in the same patients. Also, in rare instances, cases of urticaria have been attributed to atabrine.

Information about the cutaneous reactions described has been collected from all quarters and analyzed. Further data are constantly being gathered. Carefully planned studies designed to clarify the significance of these dermatoses and the role of atabrine and other suggested factors in its causation are being performed both in the United States and overseas. Medical officers who have been stationed in the theaters where these reactions have occurred as well as those who have seen these patients in general hospitals in the Zone of the Interior have submitted articles for publication which have now been released.

The fact that psychologic disturbances occasionally appear in association with the use of atabrine is well known. When unduly large doses are given, and rarely with moderate doses, for clinical treatment, toxic delirium, such as occurs with bromides, may develop. The psychologic disturbance may take the simple form

of brief periods of confusion. Such manifestations have been reported occasionally in connection with suppressive medication, especially when unauthorized high doses have been taken.

Many untoward effects have been attributed to atabrine which undoubtedly have no connection with the drug, as in the instance of the rumor that it affects the sexual powers.

In accordance with par. 7, AR 40-215 (25 April 1945), when after thorough study it is concluded that an individual is definitely sensitive to atabrine (or quinine), as in the case of other drugs, appropriate entry should be made on W. D. A. G. O. form 8-117 (Immunization Register).

Quinine is available for the treatment of persons who are known to be sensitive to atabrine or to be seriously intolerant of the drug. It should not be used, however, for units or organizations as a whole.

SUMMARY

In the light of these considerations and on the basis of other data which cannot be presented in a communication of this type, the following general statements regarding atabrine and reactions attributable to atabrine are submitted for the information and guidance of all concerned:

1. The military value of atabrine in suppressing vivax malaria and curing falciparum malaria far outweighs untoward effects which have been attributed with reason to the use of the drug.
2. Suppressive doses of atabrine greater than 0.7 Gm. per week should not be employed routinely. This amount has been shown to provide adequate protection against clinical attacks of malaria, provided "atabrine discipline" is strictly enforced. In clinical treatment of malarial attacks with atabrine, routine dosage should not exceed 2.8 Gm. in seven days.
3. Atabrine suppressive medication should be discontinued promptly and atabrine should not be given for clinical treatment when persons develop atypical lichen planus, unexplained chronic eczematoid dermatoses, unexplained toxic erythematous eruptions, exfoliative dermatitis, severe leukopenia, agranulocytosis and aplastic anemia, acute hepatitis (not including disturbances believed to be due to malaria) or toxic psychoses which can be reasonably attributed to atabrine after careful clinical study.
4. It should be remembered that drugs other than atabrine, such as the sulfonamides and arsenicals, may be harmful to persons with the conditions mentioned.
5. Caution should be exercised in attributing disease conditions to atabrine until careful and complete studies have been made over a period of time to establish such relationship. Because of the widespread use of atabrine, its administration inevitably coincides with many diseases with which the drug has no connection. Even if a connection is established between atabrine and a given untoward effect, its significance relative to the military value of atabrine requires evaluation. It should be remembered that, since the use of atabrine became widespread, clinical attacks of falciparum malaria have been almost eliminated and deaths from malaria have been extremely rare. There is no question of the general superiority of atabrine over quinine, both for suppression and for clinical treatment.

Clinical Notes, Suggestions and New Instruments

PENICILLIN OINTMENT IN THE TREATMENT OF IMPETIGO NEONATORUM

EDWIN L. KENDIG JR., M.D., AND RUSSELL H. FISKE, B.S.
RICHMOND, VA.

Wartime conditions, with overcrowding of nurseries and inadequate personnel, have caused impetigo neonatorum to assume new importance. This infection is always troublesome and may be followed by furunculosis, crsipelas, cellulitis or general sepsis.

In this study 14 cases were treated with penicillin ointment, with satisfactory results (tables 1 and 2).

METHOD OF TREATMENT

The penicillin ointment used in this study was always freshly made. It was prepared by taking up a stock solution of penicillin in a eucrite type base (5 per cent by weight) and dispersing in White Ointment U. S. P. XII. For the first part

TABLE 1.—Results in Patients Treated with Ointment Containing 250 Units of Penicillin per Gram

Patient	Severity of Infection	New Lesions After Treatment Begun	Recurrence
B. H.	++	24 hrs.	None
B. D.	++	24 hrs.	None
G. B.	++	None	None
G. R.	+++	48 hrs.	None
G. B.	++	None	None
B. H.	++	None	1 week
B. K.	++	None	1 week

+ = 1 to 3 blebs; ++ = 3 to 10 blebs; +++ = more than 10 blebs.

TABLE 2.—Results in Patients Treated with Ointment Containing 333 Units of Penicillin per Gram

Patient	Severity of Infection	New Lesions After Treatment Begun	Recurrence
B. L.	+	None	12 days
G. A.	+	None	None
B. S.	++	None	None
B. H.	+++	None	None
B. H.	++	None	None
B. K.	++	24 hrs.	None
B. P.	+++	None	None

+ = 1 to 3 blebs; ++ = 3 to 10 blebs; +++ = more than 10 blebs.

of the study the ointment was made with 250 units of penicillin to each gram, but this was later increased to 333 units to each gram.

Each new case of impetigo neonatorum was strictly isolated. The exfoliated membrane of epidermis, which constitutes the bleb, was completely removed by means of alcohol on cotton. Penicillin ointment was applied generously to the moist red base which remained and to the surrounding area of skin. The ointment was applied at least twice daily. No bath was given until the lesions were completely dry. At the time of discharge from the hospital, the mother was instructed to follow the same routine for at least one week, or until there were no lesions present.

RESULTS

In the 14 cases in this series there were no new lesions after the treatment had been in effect for forty-eight hours. After a maximum of three days all the lesions appeared to be dry and healed. In 3 instances, however, there was a recurrence of the condition after the patient had been home from the hospital more than one week. There was no apparent correla-

tion between these and the severity of the disease, as 2 of the cases were of only moderate severity and the other was mild. It should be noted that each recurrence was after treatment had been discontinued and baths had been started.

COMMENT

In many clinics sulfonamide ointments have supplanted 1 per cent aqueous gentian violet, 3 per cent ammoniated mercury ointment and other agents formerly¹ used in the treatment of impetigo neonatorum. Treatment by this method is admittedly more effective, but the danger of sensitization² of the patient makes its use inadvisable. Penicillin ointment, on the other hand, is not only effective but also without danger of side effects. Impetigo neonatorum is a hospital disease, and penicillin ointment can and should be freshly prepared in the hospital pharmacy.

414 West Franklin Street.

ODOROUS WOUNDS AND FISTULAS

W. WAYNE BABCOCK, M.D., PHILADELPHIA

Fetor from intestinal and urinary fistulas or from incontinence, suppurating wounds, necrotic tumors or gangrene permeates the room or ward, to the great distress of other patients and the disgust of attendants and visitors. The odor clings to the clothing of those in the room, surrounds the diet tray and renders the food unpalatable, and seeps through the corridors of the hospital, suggesting that even modern hospitals have characteristically unpleasant odors. How often, as one passes down the hall, is one conscious that the patient in room 27 is either incontinent or has a urinary fistula, while the odor in the vicinity of 36 indicates that the occupant has a colostomy. In a distant, sterile operating room one may suddenly realize that a patient with an extensive burn has been brought to the floor for skin grafting. Even on opening the front door of a hospital I have recognized the stench from a patient with gas gangrene on an upper floor. Methods for overcoming these odors, apart from vigilant and untiring nursing attention, now difficult to obtain, apparently are not generally understood, or at least are not used. Perfumes or pungent antiseptics about the bed of the patient as a rule are undesirable and quite inadequate. The wick protruding from the bottle of a commercial deodorant is helpful and has a less objectionable odor but does not screen the source of the trouble, which is the patient's body and dressings.

There are two simple agents which I have found very effective in deodorizing the patient, his dressings and the bed coverings. If the wound, fistula or opening from which there is odorous emanation is covered with several layers of gauze or cotton saturated with a 1:300 to 1:500 aqueous solution of potassium permanganate, which has little odor, escaping gas, solid or liquid material may be entirely deodorized. All that is required is that the offensive area and discharge be completely covered, that the dressings remain wet and that the permanganate solution be reapplied from time to time, as it loses its deodorizing qualities by oxidation. The permanganate solution is a useful wound dressing and rarely irritates the skin or delays healing. However, it stains bed linen as well as the skin a dirty brown, which is not removed by ordinary washing but which may be decolorized by a solution of oxalic acid or other chemical, with possible detriment to the fabric. Hospital authorities therefore may have reason to object to the use of permanganate at the bedside.

Another potent deodorant, which does not stain fabrics, is bromine used in solutions of 1:500 to 1:2,000. The 1:500 solution has a pungent odor and may be irritating to sensitive

1. Holt, L. E., Jr., and McIntosh, Rustin: *Holt's Diseases of Infancy and Childhood*, ed. 11, New York, D. Appleton Century Company, Inc., 1940, p. 122.

2. Dark, R. A.: Sensitivity to Topical Application of Sulfathiazole Ointment, *J. A. M. A.* 124: 403 (Feb. 12) 1944. Tobias, Norman: The Use and Abuse of Sulfonamides in the Treatment of Skin Diseases, *South. M. J.* 38: 467 (July) 1945. Reports of the Council on Pharmacy and Chemistry: Dangers from the External Use of Sulfonamides, *J. A. M. A.* 128: 1024 (Aug. 4) 1945.

From the Surgical Department of Temple University Hospital.

surfaces and the nasal mucous membranes. Such a strong solution is to be used only in extreme cases, although little odor of the bromine may pass through the outer dressings and bed coverings into the air of the room. Compresses wet with such a strong solution may be used to cover a gangrenous limb. Solutions of 1:1,000 to 1:2,000 may be applied on gauze or other absorbent dressings for days over the perineum or other odorous parts with little or no irritation of the skin. It is necessary to moisten the dressings from time to time, whenever the faint odor of bromine is lost, and when properly used the offensive odor or that of the chemical is hardly noticeable in the room.

The deodorant qualities of bromine I learned many years ago in visiting a laboratory for the commercial preparation of smallpox vaccine. In a large room there were many calves with abdomens covered with pustules, yet the air was free from unpleasant odor. The veterinarian in charge told me that bromine was the best agent he had found to eliminate the very objectionable odors from the calves, and of course the chemical was not applied to the animals.

This led me to the use of bromine solution on septic and offensive wounds. Not only is the odor immediately overcome, but sloughing wounds usually develop red firm granulations, become clean of necrotic tissue and heal rapidly. Offensive fistulas covered with layers of gauze or pads wet with weak bromine solution give little objectionable odor, the surrounding skin is not irritated and fabrics are not stained.

As bromine solution is decomposed by light and becomes colorless and inert, it should be kept corked in brown glass bottles.

3401 North Broad Street, Philadelphia 40.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. HOWARD A. CARTER, *Secretary.*

TECA TWO-CIRCUIT HYDROGALVANIC THERAPY APPARATUS NOT ACCEPTABLE

Manufacturer: Teca Corporation, 220 West Forty-Second Street, New York.

Now and then the Council on Physical Medicine is called on, in order to fulfil its assumed obligations to the medical profession, to investigate and render reports on devices or methods which have not been submitted to the Council if it considers such reports important to public health and welfare.

The Teca Hydro-Galvanic Therapy apparatus falls in this category. The equipment consists mainly of a galvanic generator with two independent circuits, each with its own milliammeter, intensity control and polarity switch. One hundred and fifteen volt alternating current is rectified by a selenium rectifier. By means of a switch both circuits can be powered by an independent battery, if the operator desires to use direct current generated by a battery. The controls are arranged to permit one current, if the operator prefers, to be generated by a battery and the other current by the rectifier. The machine is claimed to be ground free, and treatments may be given in any enameled or porcelain bathtub or in four individual tanks for treatment of all extremities. The electrodes are made of solid carbon and are completely encased in wooden containers. The manufacturer believes that the apparatus is an improvement over older types of equipment for galvanic baths. The firm claims that the two circuit generator allows flexibility of electrode grouping and that a general as well as local treatment can be administered at the same time.

The physiologic effects of the Teca Bath are said to be general body or general muscular stimulation, according to the type of current, and acceleration of metabolism and a slight lowering of blood pressure.

The clinical claims for the Teca Bath in published advertising matter include arthritis, rheumatism and allied conditions, neuritis, sciatica, neuralgia, chronic pelvic inflammations, parametritis, menstrual disorders, constipation and metabolic disorders such as obesity.

In the Council adopted article "Evaluation of Methods Used in Physical Therapy" (Handbook of Physical Therapy) it is recorded that results from physical therapeutic measures must be carefully evaluated and in order to evaluate the effects of physical therapy: "Observations with the particular form of treatment must be controlled and checked in a series of patients without the treatment. The number of observations must be so large as to minimize some of the disadvantages of random sampling." The evidence available, in the opinion of the Council, does not meet this criticism and therefore does not substantiate the therapeutic value of the Teca Bath (for the aforementioned reasons).

Other questionable points on which the evidence is not clear:

1. What is the therapeutic value of regrouping the circuits?
2. What is the therapeutic value of two independent circuits?
3. Why is it necessary to use one battery circuit and one alternating current supply circuit?
4. What is the chemical composition of the products used in the solution?

The Council on Physical Medicine voted not to include the equipment in its list of accepted devices because of the lack of critical therapeutic evidence to substantiate the claims made for the device.

The foregoing report was sent to the Teca Corporation prior to publication in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The manufacturer disagreed with the report of the Council and requested that it be held in abeyance awaiting additional information.

The manufacturer presented the names of several physicians who had had experience with the Teca Bath. The Council solicited information from these physicians and asked for an account of their experiences with the product. The Council gave careful consideration to their replies but found no convincing evidence which would warrant a change in the decision of the Council.

After due deliberation, the Council voted to reaffirm its previous stand and not to include the Teca Two-Circuit Hydrogalvanic Therapy Apparatus in its list of accepted devices. The Council will reconsider the appliance without prejudice when adequate information is submitted.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

GEORGE K. ANDERSON, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (See Accepted Foods, 1939, p. 156)

Heinz Company, Pittsburgh.

HEINZ STRAINED VEGETABLES AND LAMB WITH MILK AND CEREAL contains lamb carcass, lamb broth, rice, potatoes, carrots, celery, onions, salt, milk, cornstarch and water.

Analysis (submitted by manufacturer).—Total solids 11.82%, total sugar as sucrose 0.88%, acidity as citric 0.68%, protein (N \times 6.25) 2.06%, ether extract 1.35%, crude fiber 0.50%, ash 0.88%, salt, 0.5%, total carbohydrates other than crude fiber, by difference 7.05%, calcium 20.0 mg. per hundred grams, phosphorus 22.0 mg. per hundred grams, iron 0.26 mg. per hundred grams, copper 0.12 mg. per hundred grams.

Calories.—0.49 per gram, 14 per ounce.

Vitamins.—

	I. U./100 Gm.	Mg./100 Gm.
Vitamin A	2,605
Thiamine	0.0167
Riboflavin	0.0371
Ascorbic acid	0.66

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SATURDAY, DECEMBER 15, 1945

THE HOUSE OF DELEGATES SESSION

The end of the war made possible a session of the House of Delegates of the American Medical Association in Chicago during the period from December 3 through December 5. Practically a full attendance assembled, with delegates from all the constituent bodies and from the scientific sections and with representatives of the councils and other official bodies of the Association. The addresses of the Speaker of the House, the President-Elect and the President and the reports of trustees and officers appear in this issue or have been previously published. These were referred to the reference committees of the House of Delegates, and the final actions taken will be included in the proceedings to be published in THE JOURNAL during this week and the weeks to follow.

The Board of Trustees referred to the House of Delegates the address of President Harry S. Truman and the Wagner-Murray-Dingell bill, which were recently discussed in THE JOURNAL. Among the most significant of all the actions taken by the House of Delegates was the adoption of the report of the Reference Committee on Legislation and Public Relations, under the chairmanship of Dr. Edwin S. Hamilton of Illinois, which defines the policy of the American Medical Association on these proposals. As might be expected, the House of Delegates expressed its opposition to federal compulsory sickness insurance as proposed by the Wagner-Murray-Dingell bill and also to the extraordinary proposals made by Senator Pepper in his bill for maternal and infant care.

Among the many problems considered by the House of Delegates, those of first importance related to the physicians still in military service and those now being discharged. By direction of the House of Delegates a new Committee on Military Service has been established which is to give careful consideration to all the communications that have been received from men in the service

in order that the difficulties that have prevailed in this war may be overcome in any future emergency. The Committee on Postwar Medical Service is being charged with many of the problems of the returning medical veteran; the House of Delegates requested the Board of Trustees to develop the Bureau of Information on a permanent basis to intensify the activities now under way for aiding the returning veteran in securing internship or residency or graduate education and also with information as to suitable locations, licensure and similar matters that are to him of intimate concern.

Much of the time of the House of Delegates was occupied, particularly in the executive session, with the internal operations of the Association: the authority and functions of the Board of Trustees, of the Council on Medical Service and Public Relations and the work of various officers and bureaus in the headquarters office. By definite action the House of Delegates clarified these responsibilities.

Many resolutions were introduced in the House of Delegates relative to economic, social and scientific questions, all of which were referred to the appropriate reference committees and on all of which there were decisions. Especially significant were the action establishing a Section on General Practice as a permanent member of the scientific sections and the recommendation for a new by-law which will provide for two meetings of the House of Delegates each year, thus enabling the representative body of the Association to express promptly the policies of American medicine on most of the large problems that affect the medical profession.

The opening meeting for 1945 was marked by the inauguration of the new president, Dr. Roger I. Lee of Boston, whose address entitled "What is Adequate Medical Care?" was published as the leading article in THE JOURNAL last week. An unusual feature of this meeting was the presentation to Brigadier General Fred W. Rankin of the Distinguished Service Medal with a citation recognizing his military service. In making this presentation Dr. Roger I. Lee called attention to the pardonable pride which the Association takes in the fact that more than 60,000 physicians served in the armed forces. In introducing Brigadier General Noyes, who conferred the decoration, Dr. Lee said:

Since the outbreak of World War II, 227 have been reported killed in action and 409 died in military service. Moreover, up to the first of December 1945 physicians have been distinguished by recognition with citations and medals in great numbers for a variety of distinguished services, which varied from organizations that have saved the lives of thousands to individual discoveries which have achieved worldwide recognition. The Bronze Star was conferred on 297 physicians for exceptional conduct, including bravery equal to that of the most courageous of fighters under the most hazardous of conditions. Physicians have at the peril of their own lives entered the hold of vessels burning and sinking at sea to care for the wounded and to bring them out. Physicians have gone into the midst of exploding

shells to administer first aid and blood transfusions to the wounded. The Silver Star has been given to 100 physicians, the Legion of Merit to 145 physicians, the Soldiers Medal to 46 physicians, the United States of America Typhus Medal to 34 physicians, the Medal of Honor to 3, the Navy and Marine Corps Medal to 17, the Navy Cross to 14. Among the miscellaneous citations have been the awarding of the Croix de Guerre, the Cross of the Knight Commander, the Italian Cross for War Merit, the Medal of Distinction, and other foreign decorations. And finally, the Distinguished Service Medal has been awarded to Col. James O. Gillespie, Major Gen. James C. Magee, Brig. Gen. Leon A. Fox, Brig. Gen. Percy J. Carroll, Major Gen. Norman T. Kirk, Major Gen. George C. Dunham, Brig. Gen. Joseph I. Martin, Brig. Gen. John A. Rogers, Capt. George B. Dowling, Brig. Gen. Malcolm C. Grow, Major Gen. Morrison C. Stayer, Rear Admiral William Chambers, Major Gen. Warren F. Draper, Major Gen. George F. Lull, Comdr. James J. Sapero and Capt. Emile G. Schuster.

The list of the members of the medical profession who have been decorated at war is at present far from complete. No doubt many others will yet receive decorations for remarkable accomplishments. Perhaps some of the names of those who have been recognized have been missed. Symbolic of all of these decorations, therefore, is the award made to Brigadier General Fred Rankin, a former President of the American Medical Association.

The election of officers brought to the Association as President-Elect Dr. Harrison H. Shoulders, Nashville, Tenn., for many years Speaker of the House of Delegates; as Vice President Dr. William R. Molony, Los Angeles, long a member of the House of Delegates from California; for the Board of Trustees three new members, Dr. John H. Fitzgibbon of Portland, Ore., Dr. James R. Miller of Hartford, Conn., and Dr. Dwight H. Murray of Napa, Calif. Dr. Olin West, for many years Secretary of the Association, was reelected unanimously, as was also Dr. Josiah J. Moore, the treasurer. Dr. Herman G. Weiskotten of Syracuse, N. Y., was reelected to the Council on Medical Education and Hospitals; Dr. Henry R. Viets, Boston, to the Council on Scientific Assembly, and Dr. Louis A. Buie, Rochester, Minn., to the Judicial Council. To the Council on Medical Service and Public Relations were elected Dr. Alfred W. Adson, Rochester, Minn., Dr. Walter B. Martin, Norfolk, Va., and Dr. Raymond L. Zech, Seattle.

The next annual session of the Association will be held in San Francisco, July 1-5, 1946. Plans were developed for the celebration of the centennial of the Association, which will be held in Atlantic City in 1947.

THE PRESIDENT-ELECT: DR. HARRISON H. SHOULDERS

On request of many delegates, Dr. Harrison H. Shoulders, Speaker of the House of Delegates since 1938, resigned his position at the opening of the elections and was thereafter nominated and elected to the position of President-Elect of the American Medical Association. From 1930 to 1938 Dr. Shoulders served continuously as a delegate from the Tennessee State Medical Association. He was elected Vice Speaker of the House of Delegates in 1935 and reelected in the two years following, becoming Speaker of the House in 1938. He was secretary of the Tennessee State

Medical Association and editor of its *Journal* from 1927 to 1945. Dr. Shoulders, who is now 59 years old, is a native of Tennessee. Following study at the Potter Bible College in Kentucky he went in 1904 to the University of Nashville Medical Department, where he received the degree of Doctor of Medicine in 1909. He was married on Dec. 5, 1922, so that the day of his election to the presidency of the American Medical Association fell, by a fortunate coincidence, on his twenty-third wedding anniversary.

Following his internship at St. Thomas Hospital in Nashville he became resident surgeon at the Forts Infirmary, which position he held until 1912. He then became assistant sec-

retary and executive officer of the Tennessee State Department of Health and held this position until 1917. In 1919 he went for postgraduate study to the New York Postgraduate Hospital, after which he was resident surgeon at St. Luke's Hospital and the Hospital for Ruptured and Crippled in New York City through 1921. He served as a captain in the Medical Corps of the U. S. Army overseas from 1917 to 1919. He was certified as a member of the Founders Group by the American Board of Surgery; he is also a Fellow of the American College of Surgeons, is assistant professor of clinical surgery at Vanderbilt University Medical School and assistant visiting surgeon at Vanderbilt University Hospital, was an organizer and served as first president of the Nashville Surgical Society and has written many articles on surgery in the medical literature.



HARRISON H. SHOULDERS, M.D.
PRESIDENT ELECT OF THE AMERICAN MEDICAL ASSOCIATION

The service of Dr. Harrison H. Shoulders to American medicine has been distinguished by an intense belief in the spiritual mission of the physician as a healer. In his addresses to the House of Delegates he has emphasized constantly the high ethical purpose of medical practice and the dedication of the physician to his profession.

STUDIES ON STREPTOMYCIN IN MAN

Intravenous injection of a single dose of 600,000 units of streptomycin in man, according to Zintel and his co-workers,¹ was followed by a concentration of the drug in the blood which decreased at a more or less uniform rate for six hours. Fifteen minutes after administration the average blood streptomycin level was 32.8 units. At the end of six hours a small amount of streptomycin, 4.9 units per cubic centimeter, was still detectable in the blood in the majority of instances. When the same amount of streptomycin was administered as a single dose subcutaneously, the maximum blood level was not attained until two or three hours later. An additive effect was obtained when the drug was administered every three hours. When 3,000,000 units of streptomycin in 3,000 cc. of a 5 per cent glucose solution was administered daily by continuous intravenous infusion, the blood streptomycin levels usually varied between 20 and 60 units of streptomycin per cubic centimeter of blood. The authors administered streptomycin orally at the rate of 1,000,000 units a day to 6 patients and found that only occasionally was there any streptomycin in the blood, and then in minimal amounts, namely 1 to 6 units per cubic centimeter of blood. Most of the drug was eliminated in the feces. Apparently streptomycin passes through the gastrointestinal wall with difficulty, since little appears in the blood when given orally and only small amounts are found in the gastrointestinal tract when administered intravenously. Anderson and Jewell² did not detect any streptomycin in the serum at any time after oral administration of 600,000 units of streptomycin dissolved in 100 cc. of tap water.

Zintel and his co-workers found that streptomycin, when administered intravenously, subcutaneously or intramuscularly, is excreted largely in the urine. The highest urine concentration of the samples taken three hours after the injection of 600,000 units of streptomycin was 520 units per cubic centimeter. Following parenteral injection the drug was found to be distributed throughout most body fluids, such as blood, urine, ascitic fluid, pleural fluid, aqueous humor, vitreous humor, amniotic fluid and bile. Small amounts of the drug appeared in the spinal fluid in healthy per-

sons. These authors found no evidence of either hepatic or renal damage from administration of a single massive dose of streptomycin. Anderson and Jewell, in their studies on man, obtained much the same results. They found that the curves of the serum concentrations of the drug after intramuscular or intravenous injection did not differ significantly except during the first few minutes after injection. They also found that intrathecal administration of streptomycin in doses up to 20,000 units does not produce signs of meningeal irritation. With doses of 10,000 to 20,000 units an appreciable concentration of the drug can be maintained in the cerebrospinal fluid for at least twenty-four hours. Serious toxic reactions did not follow the injection of single doses of streptomycin in amounts up to 600,000 units or after the continued administration of the drug for periods of two to three weeks in doses totaling 2,725,000 to 18,150,000 units.

Current Comment

DR. GEORGE R. MINOT RECEIVES THE DISTINGUISHED SERVICE MEDAL

To the list of eminent physicians on whom the Distinguished Service Medal of the American Medical Association has been conferred, the House of Delegates at its meeting in 1945 added the name of George Richards Minot. His contribution to our knowledge of the causes and methods of control of pernicious anemia has been recognized throughout the world. The blood is unquestionably the most important of all the tissues of the body. Once every person who developed pernicious anemia died of that disease. Today, by the discovery made by George R. Minot and his associates, those with pernicious anemia are given years of life in which they live to all intents and purposes as normal human beings. This great discovery opened a new pathway into the field of research on blood, along which great numbers of investigators have traveled to build higher and higher the structure of medical science. The significance of Dr. Minot's discovery is perhaps best explained in the following paragraph from his writings:

Dietary deficiency may arise not only because of an improper intake of one or more substances required by the body but also because established disease may prevent the formation, absorption or utilization, or cause abnormal loss from the body, of necessary substances. The effects of extra demands of organisms are always to be reckoned with. The physiological strain of child bearing requires dietary factors to be often much greater than the standard requirements for women. Moreover, since the material diet in pregnancy and lactation inevitably affects the well being of the infant, the health of the whole population depends to a greater or less extent on the nutrition of the mothers. Fundamental research bearing on nutrition in such fields as chemistry, as well as practical applied studies, offers a basis endeavor for better public health. There are today throughout the world multiple opportunities for the prevention of many sorts of disorders by better nutrition. The partaking of proper food is excellent preventive medicine and upon it depends the integrity of man. Men with different types of training must seek for more information on nutrition and carry forward the work so that the ultimate goal will be nearer for those who follow us.

1. Zintel, H. A.; Flippin, H. F.; Nichols, Anna C.; Wiley, Marjorie M., and Rhoads, J. E.: Studies on Streptomycin in Man, *Am. J. M. Sc.* **210**: 421 (Oct.) 1945.

2. Anderson, D. G., and Jewell, Marjorie: The Absorption, Excretion and Toxicity of Streptomycin in Man, *New England J. Med.* **233**: 485 (Oct.) 1945.

Dr. Minot has been previously honored with honorary degrees from many universities and medical societies, with the Kober gold medal of the Association of American Physicians, the Cameron prize of the University of Edinburgh, the gold medal of the National Institute of Social Sciences, the gold medal and award of the *Popular Science Monthly*, the Moxon medal of the Royal College of Physicians, London, the John Scott medal of the city of Philadelphia, the gold medal of the Humane Society of Massachusetts and, together with William P. Murphy and George H. Whipple, the Nobel prize in medicine for 1934. The Distinguished Service Medal of the American Medical Association is thus added to many other distinctions given by the world to a great investigator.

ELECTRICAL TRANSCRIPTIONS LIST AUGMENTED

On page 1111 of this issue of THE JOURNAL appears an announcement of another series of electrically transcribed radio broadcasts available for local medical societies from the Bureau of Health Education. The new series deals with mental hygiene in terms of everyday living problems as indicated by its title, "Why Do You Worry?" The material was prepared by psychiatrists and the program is summarized by them, but it is not psychiatric in character or approach. It is a simple sensible program on adjustments to everyday living problems with suggestions of how and when psychiatric medicine can be of aid. This is the first of several series now being planned dealing with special fields of medicine. Programs in the field of pediatrics are now under consideration. At the same time the Bureau has dropped a series under the title "American Medicine Serves the World at War," which has lost its timeliness with the cessation of hostilities. The discontinuance of this series offers the first opportunity to estimate the service rendered by transcriptions in relation to cost. Eliminating general overhead and intraoffice costs and based entirely on the cost of master records and transcriptions, the preparation and lending of this series for six hundred and eighty local broadcasts represented a cost per individual broadcast of \$1.33. There is no way of estimating the local audience, but at the minimum this would seem to be an economical way of reaching the people. With the addition of programs in mental hygiene and the elimination of strictly wartime recordings there remains a transcription library available for local medical societies of ninety-five separate programs covering emergency situations in the home, communicable disease topics, public health, personal health in middle years, living and liking it, mental hygiene, summer health suggestions, and special material for elementary school children. The local response to the availability of these platters has been good, especially from the medical societies of Texas, Pennsylvania, Wisconsin and Arizona. There are many platters available for lending which would be far more useful on the air than on the stock shelves of the Bureau of Health Education.

SIMULATED BLOOD PRESSURE RESPONSES IN LIE DETECTOR TESTS

Instruments for recording changes in blood pressure, pulse and respiration have been used effectively in criminal investigations to determine whether or not the person being tested is telling the truth. The recordings of approximately 20 per cent of the subjects thus tested are too indefinite to permit the examiner to make a diagnosis of deception. Experiments conducted by Reid¹ have revealed that ambiguities in the blood pressure tracings are frequently induced by some type of unobserved muscular movements. He has demonstrated in experiments on himself that all the typical blood pressure responses of deception can be produced at will, and that recorded evidence of muscular movement is in itself a criterion of deception. The ambiguities in the recordings of the blood pressure may be accomplished by the use of muscular contraction or by muscular pressure. Reid believes that a percentage of these discrepancies in the blood pressure tracings may be the result of deliberate attempts on the part of the subject "to beat the machine." To eliminate this possibility, Reid has devised an instrument which consists essentially of a closed pneumatic system in which inflated rubber bladders placed under the forearms and thighs are connected to three separate tambour units, which permits the recording of any muscular exertion by the subject's feet, legs, arms and hands. The experiments with this device indicate that both muscular contractions and the application of pressure to skeletal muscles which can influence the blood pressure tracing may now be detected by new devices which also serve to locate the regions from which the muscular movements emanate. The experiments also reveal that not all subjects can influence their blood pressure curve by muscular action. The author believes that examiners will have a means of separating true patterns of deception from fraudulent ones with his technic.

TEACHING INSTITUTIONS AND ADJACENT VETERANS' HOSPITALS

Elsewhere in this issue (page 1100) appears an announcement of the details of the plans developed by the Veterans Administration for complete cooperation with teaching institutions and veterans' hospitals in the proximity. For the first time the opportunity exists for providing the veteran with the highest type of medical service through the use of the civilian physicians and also for developing the standards of medical care in veterans' hospitals by bringing them up to the qualifications necessary for internships and residencies. The medical profession should do its utmost to give the fullest possible cooperation to Major General Hawley and his associates in order that the fullest success may result. This is important primarily for the veterans who will be served but also for the advancement of medical science.

1. Reid, J. E.: Simulated Blood Pressure Responses in Lie Detector Tests and a Method for Their Detection, *J. Criminal Law & Criminology* including *Am. J. Police Science* 36: 201 (Sept.-Oct.) 1945.

MEDICINE AND THE WAR

PLANS FOR COOPERATION BETWEEN TEACHING INSTITUTIONS AND VETERANS' HOSPITALS

Introduction

NOTE.—Following are the details of the plans of cooperation between teaching institutions and veterans' hospitals and also for the use of civilian practitioners in the care of the veteran. The description includes the appointments to be given to civilian physicians and the terms of their employment. There follow also letters that have been sent to the deans of medical colleges, who will be asked to cooperate fully in the development of the plan.—ED.

This is a statement of General Hawley's plan for the immediate future for the staffing of veterans' hospitals and for cooperation with teaching institutions. There will probably have to be some variations made in the plan for individual hospitals according to the necessities, but the plan should work if:

1. Those in charge of administration of hospitals want it to work;

2. There is cooperation between hospitals, medical schools and consultants appointed by the Surgeon General of the Veterans Administration.

The object of these changes is to give better care to individual patients by bringing into the veterans' hospitals the best trained men obtainable in civilian practice of medicine. This can be done so far as consultants are concerned by putting consultants on a basis which will allow them to devote part of their time to veterans' hospitals and part to their own private practice and teaching.

It is realized by the Surgeon General that it was the complete cooperation of the civilian doctor, fitted into his proper sphere of interest and ability in the Army, that made the service to the G. I. outstanding in the field of military medicine and surgery. It is planned that this same type of service will be continued in the Veterans Administration, the only difference being that neither the doctor nor the patient will be in uniform.

The Plan

There will be three classes of service.

Senior Consultants (senior consultants—present consultants).—This staff in most hospitals near teaching centers already exists and is functioning. There will be no change unless recommended by the local consultants to the Surgeon General and the manager of the hospital. However, senior consultants must be fitted into the general plan. If at present there are senior consultants that cannot be fitted into this plan except with difficulty, the present incumbents must be replaced.

Consultants (consultants—new consultants).—These men, who are essentially attending men but who under existing laws must be designated as consultants because there is at present no provision for attending men, are to be appointed by agreement of the local consultants appointed by the Surgeon General and the manager of the hospital. These men will be appointed immediately on recommendations of the local "deans' committees." They will be selected from the staffs of medical schools or recommended by local consultants and will be drawn at present from the ranks of discharged medical officers wherever possible; they will be men who have been certified by their respective boards; they will act as attending men act in civilian hospitals.

Consultants will be paid on a per visit basis, no two visits to be charged for on the same day, and their compensation will not exceed \$6,000 per year, on an average monthly basis of \$500. Their duties will be those expected of an attending physician in any university hospital. They will be assigned to their individual wards and will be responsible to the chief of service, clinical director or manager as may seem best in the administration of the individual hospital.

Ward Officers (ward officers—residents).—Under existing laws there is no provision for residents. Such men now must come in under civil service and meet necessary physical qualifications. Arrangements have been made for immediate appointment of applicants by local managers on the recommendation of approved local "deans' committees" after completion of necessary form 57. Such men may go to work immediately.

These men will be essentially residents and will be put on a rotating service in their respective specialties with the idea that they will have opportunity to prepare for their boards under consultants and senior consultants. Teaching institutions with which the veterans' hospitals are cooperating will be responsible for furnishing instruction in the basic sciences prescribed by various boards.

At present ward officers will be paid under civil service, starting at \$3,640 a year, not including room and board. When the law is changed these men will be on a different financial basis, probably with lower pay but with room and board. Any acceptable ward officer at present on the service of a veterans' hospital associated with a teaching institution, who has given satisfactory service, may be placed in line for continuing training for his chosen board. Ward officers wishing to fit themselves for board examination should apply to their managers and consultants to the Surgeon General and shall be put in line for such training only on their recommendation.

Ward officers will be selected first from the ranks of discharged junior medical officers who wish to prepare for their boards in various specialties. Their services will be rotating services through all the subspecialties of medicine and surgery, including orthopedic surgery. After their first complete rotation they should be allowed whenever possible to specify their preference as to the subspecialty. These services can run as long as five years in veterans' hospitals. One year of this will be in basic sciences, part of which can be given within the veterans' hospital. Such branches as pathology frequently can be given entirely within the institution; physiology, anatomy, biochemistry and others will have to be given by medical schools associated with veterans' hospitals.

It is suggested that the receiving service be continuous with the ward service and that each specialty should be represented on the receiving service rather than having the latter completely separated from ward service as is done in some institutions. This will make for continuity of diagnosis and treatment.

Local medical authorities will be responsible for offering courses to men preparing for boards. In most cases these can be paid for under the G. I. Bill of Rights. For the next year these courses will have to be held in abeyance because of lack of ward officers and the inability of some schools to provide this instruction immediately. When the attending staff is appointed and the schools can show the Council on Medical Education and Hospitals that they are prepared to give courses in the basic sciences, the boards will be requested to give their approval of the institution as a postgraduate institution for teaching. I have already been assured by the boards of surgery and medicine that their full cooperation will be forthcoming.

Permanent Staff.—Where there already exists a chief of service who is competent, who has been giving good service and who is a member of a board, of the College of Physicians or of the College of Surgeons, it would seem best not to interfere with his status, at least at this time, if he is a man of ability and vision and approves of the development of the proposed plan. It is suggested that he choose one of his ward officers to act as his adjutant to help coordinate the various services being handled by the consultants, to assist them at various times as the chief of service may see fit. This will enable the adjutant to prepare for his board in his specialty. If, however, the professional qualifications of a chief of service so warrant, he may be promoted to a hospital not immediately connected with a teaching institution to raise its standards.

If this plan does not seem satisfactory because of incompatibility of some sort, and a senior consultant or a consultant can be found who will devote enough time to the service to coordinate it and run it more satisfactorily, it would be up to the local administration to work out the plan.

Modus Operandi for Appointing Incoming Staff of Various Grades at Veterans Administration Hospitals

Senior Consultants.—Senior consultants should be recommended by the "dean's committee" of the medical school affiliated with the veterans' hospital. This group of consultants now exists in most veterans' hospitals near medical centers. They will be appointed from outstanding men of professorial rank and will act as supervisory consultants to the manager, chiefs of staff and the staff of the hospital and will guide the teaching as well as the clinical service in the hospital. Their compensation will be fixed, as now, on the basis of the amount of time spent and the kind of work performed during that time.

Consultants.—These men are essentially attending men and will be selected from discharged medical officers who have held teaching positions in medical schools prior to military service. They should be Fellows of the American College of Surgeons or the American College of Physicians or specialists certified by one of the specialty boards. If they have not passed the second half of the board examination because their military service prevented this, they may be recommended by the "dean's committee" because of their past record; it is permissible to use them as consultants, since they will be coming up for the second half of the board examination within the next six months or a year.

The method of appointment is as follows: They shall be recommended to the manager of the hospital for a particular service, medical, surgical or other specialty. There shall be included with the recommendation a full record of their training and accomplishments, positions held, research work, publications and army service record. Chief medical officers should transmit recommendations to the Surgeon General of the Veterans Administration for attention of Director of Medical Personnel. Recommendations should be sent by air mail, and we have assurance that appointments will be made promptly and returned to the manager promptly so that these men may be put in service immediately.

Ward Officers.—These men are to be selected at present from the ranks of discharged medical officers whenever possible by application to the "dean's committee" with their application. The "dean's committee" shall classify these men A, B or C according to ability and attainments. After survey the local "dean's committee" will recommend to the managers for immediate appointment sufficient personnel to fill all services necessary for the proper care of patients and teaching desired in future veterans' hospitals. The manager in consultation with the "dean's committee" shall select for recommendation to the Surgeon General a number sufficient to fill all vacancies as necessary in the veteran's hospital.

It should be specified to applicants that nobody will be appointed who does not wish to prepare for one of the specialty boards, with the direct understanding that they will remain in the veteran's hospital on service until they have qualified for such board, if the medical school affiliated with the Veterans Administration hospital training is approved by such boards as a suitable place to give such training.

If any ward officer shall prove unsatisfactory, in the opinion of the manager of the hospital and the "dean's committee," he can be transferred to another medical service in the Veterans Administration which will not necessarily prepare him for board certification, and the "dean's committee" may refuse to recommend him for such board examination.

Any individual now on service at a Veterans Administration hospital may apply for complete training for his board through the manager to the "dean's committee," and the fact that he is on service in the veteran's hospital shall not prejudice in any way his appointment to a place which will prepare him for such board. It is, however, to be understood that in spite of excellent work in one department or one section of one department performed in the past, this does not release him from any part of the rotating residency plan or give him any preference over those who are entering from the outside. It will be within the province of the "dean's committee," however, to give him credit for work already done satisfactorily in the Veterans Administration hospital.

To expedite necessary appointments and to assure the immediate professional functioning of competent personnel, arrangements for appointment have been made in the following manner: The managers of local veterans' hospitals will have the authority to appoint and put to work immediately applicants recommended by the "deans' committees" as desirable and necessary for proper functioning of veterans' hospitals as grade A medical installations. The procedure is simplified so that such applicants on the completion of the proper forms may start without further delay. This latitude is allowed because applicants will be recommended by the aforementioned "deans' committees."

Letter No. 1 Sent to Deans of Medical Colleges

Under the new plan of the Acting Surgeon General of the Veterans Administration we expect to make arrangements with the medical schools of this country, which are located near veterans' hospitals, to utilize their facilities to augment and improve staffs at the veterans' hospitals.

I am enclosing herewith plan of future cooperation with teaching medical institutions and veterans' hospitals in the immediate proximity. This is a statement of the plan we intend to follow.

I am also enclosing the modus operandi of this plan.

I have been authorized by the Surgeon General to put this plan into effect and on the receipt of your consent to willingness to cooperate, orders will be sent to the manager of the hospital in your vicinity.

The method of appointment will be recommendation of the "dean's committee," a committee consisting of the dean of medical schools and any members of his faculty of professorial rank he may desire to appoint. These committees are to be the sole judges of the professional standards to keep in the hospitals under their professional supervision.

For the Acting Surgeon General:
For PAUL B. MAGNUSON,
Director of Research and Education.
MAJOR WILLIAM T. DORAN,
Assistant Director of Research and Education.

Letter No. 2 Sent to Deans of Medical Colleges

This is in answer to your very kind acceptance of cooperation with the veterans' hospitals in establishing new high grade professional services. The plan of organization and modus operandi you are probably familiar with by now.

May I say that it will be up to the medical schools to keep the standards of your hospital at a place in medical education which will warrant the approval of all the specialty boards in each department, and the hospitals will be passed individually, by the specialty boards, not collectively. Your senior consultants will be your liaison officers between you and the medical service. They should first survey the hospital in consultation with the manager with the chiefs of various services.

Undoubtedly you will find some dead wood and it is imperative that dead wood should be eliminated wherever it is possible. The man who is interested and is a good doctor should be pushed onward. The man who is not interested except for the 4:30 bell should be eliminated. This service should not be cluttered up with uncooperative individuals, and that goes from the manager down. I will say to you personally that if the manager is not cooperative, I want to know it.

The appointment of these men, both as consultants and as residents, is simple. They can be put to work within a week from the time you recommend them by the following method. The manager of the hospital and the chief medical officer of the hospital have the right under the present Veterans Administration rule to put consultants on a fee basis at any time and as many as necessary for the proper training of the hospital and service to the patient. We have just arranged today for the appointment of the residents, who will be full time employees and must come under civil service, and an order has gone out to all hospital managers where the hospitals are located near teaching institutions that ward officers who are the equivalent of residents can be employed the day their form 57 is filled out and they can be put on the pay roll of the hospital, with one exception, that is, if their tables of organization are filled the manager should be directed to send telegraphic request to

this office for authority for temporary appointment pending organization, so that the manager cannot say to you that his quota is filled and thereby hold an undesirable man in service.

A fee basis consultant whose assignment has no reference to a time element may be appointed without limit as to fee. It is distinctly understood that in such appointments no specific time is involved. A nominal fee of \$15 to \$25 per visit could be set with no requirement as to specific number of patients that must be seen at each visit. This sum can be increased to any reasonable amount as the situation may require and, in the cases of senior consultants, compensation will be given commensurate with a scale equal to the time devoted to equivalent professional work.

If it is possible to appoint a competent physiologist as senior consultant, we would like to have him make rounds with the medical staff and the surgical staff once a week. His fee can be fixed by you by recommendation to the manager.

I am enclosing a form 57 for your information. It is the standard form used in civil service and can be filled out in a short time by

your applicant for residency. Form 57 is available at all veterans' hospitals. To prevent ordering away through Veterans Administration channels all men appointed through recommendation of the "dean's committee" as ward officer residents, they should be specifically earmarked for such service so that they will not be confused with other full time personnel. I am also enclosing sufficient professional qualification forms that are self explanatory.

I want you to know how these things can be done so that the manager cannot refuse to do them. If you have any trouble please call this office long distance or telegraph, addressing your call to Major W. T. Doran or to me, room 826 Veterans Administration Building.

For the Acting Surgeon General:
For PAUL B. MAGNUSON,
Director of Research and Education.
MAJOR WILLIAM T. DORAN,
Assistant Director of Research and Education.

ARMY

235TH GENERAL HOSPITAL OBSERVES FIRST ANNIVERSARY

The 235th General Hospital, which was activated at Camp Barkeley, Texas, Oct. 10, 1944, recently celebrated its first anniversary at Les Milles, near Marseilles, France. The 235th assumed command of the installation on Dec. 22, 1944 as a thousand bed unit. A total of 7,291 patients, including American, Allied and German prisoner of war personnel, were admitted during the period from December 1944 to VE day. American personnel comprised 2,644 of this number, of whom 1,567 were battle casualties. The primary mission of the 235th General Hospital is to service personnel of the large Calas staging area near Marseilles. It maintains a hospital of 1,000 beds with a patient census of more than 800 at present.

HONORARY FLIGHT SURGEON OF THE FRENCH AIR FORCE

Col. Paul A. Campbell, Chicago, recently received an award of wings as an honorary flight surgeon of the French Air Forces as a result of his work in aeromedical research. The presentation of the honorary wings was made by Gen. J. A. Clerc, Air Surgeon of French Air Forces, during a recent inspection visit at the School of Aviation Medicine, Randolph Field, Texas.

Colorel Campbell recently returned from the European theater, where as a member of an air staff team studying medical services of the German air force, he traveled through Germany compiling medical data for study by Air Force personnel. As director of research of the school since 1942, Colonel Campbell personally supervised and directed many projects which have been instrumental in increasing the efficiency performance and safeguarding the health of combat crews.

NEW COMMAND OFFICER AT BEAUMONT GENERAL HOSPITAL

Col. George W. Reyer was recently named the new commanding officer of Beaumont General Hospital, El Paso, Texas, replacing Col. George M. Edwards, who has retired. Colonel Reyer's medical department career began in 1917, when he was commissioned in the Medical Corps Reserve. His experience with army hospitals started in Arizona and included Manila and Corregidor in the early twenties and Italy in World War II. In recognition of his work in Italy, as the head of the 300th General Hospital, Colonel Reyer received the Commander of the Cross of the Crown of Italy from the Italian government and the "Wreath of Merit" award.

165TH STATION HOSPITAL COMMENDED

The 165th Station Hospital was recently commended by Lieut. Gen. Robert L. Eichelberger, U. S. Army, commanding general of the Eighth Army in the Philippines, who stated, in the citation, "It is with great pleasure that I commend the 165th Station Hospital for its superior performance and outstanding devotion to duty during operations against the enemy

from Dec. 26, 1944 to June 30, 1945. The untiring effort and high degree of professional skill evidenced by all officers and enlisted men have contributed materially to the alleviation of suffering of the wounded and the survival of many who were critically wounded. The inspiring manner in which the 165th Station Hospital has carried out its mission reflects great credit on the Medical Department and on the military service as a whole."

1,250,000 MEN GIVEN PHYSICAL EXAMINATION IN OCTOBER

According to a recent release from the War Department, more than 1,250,000 men were physically examined during the month of October before being discharged from the Army. Major Gen. Norman T. Kirk, Surgeon General of the Army, stated that every man released from the service will be given the ultimate medical care before returning to civilian life. He also pointed out that, in order to speed demobilization, the complete physical check on the average soldier is performed by eight doctors in one hour, provided the man has no ailment.

ARMY AWARDS AND COMMENDATIONS

Colonel Otis O. Benson Jr.

An Oak Leaf Cluster to the Legion of Merit was recently awarded to Col. Otis O. Benson Jr., formerly of Tower, Minn., at present assigned as Air Surgeon for the AAF Center in Orlando, Fla. The citation stated that "Colonel Benson was the key man responsible for welding the medical section of the 15th Air Force into an integral, efficient organization. During a very important phase of the Italian-European operation, when it was of highest importance to carry on an all-out aerial war from highly malarial and disease-ridden areas, he initiated methods of prevention and control which soon brought the health of the 15th to an exceptional standard." Colonel Benson has also been awarded the Bronze Star and the Air Medal. He graduated from Rush Medical College, Chicago, in 1930 and entered the service July 31, 1931.

Captain Harold N. Cole Jr.

Capt. Harold N. Cole Jr., formerly of Shaker Heights, Ohio, was recently awarded the Bronze Star "for meritorious service in connection with military operations against the enemy at Cebu, Philippine Islands, from March 26 to April 5, 1945. When assaulting companies suffered a number of casualties due to the strong enemy resistance and fortifications, Captain Cole, although ill with yellow jaundice, refused to leave the battalion aid station. A number of times Captain Cole went forward with the assault companies under intense fire of the enemy so that he could give aid to the men as they were wounded. Captain Cole's expert care in giving aid to the wounded men saved many lives, and his being on the front lines giving aid was inspirational to all the men of the assault companies. Captain Cole's devotion to duty, disregard for his own safety and efficient treatment of the wounded men were in keeping with the high

traditions of the Medical Corps." Dr. Cole graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1942 and entered the service July 3, 1943.

Captain Emanuel Goldstein

Capt. Emanuel Goldstein of Plainfield, Iowa, was recently awarded the Purple Heart and the Presidential Unit Citation for service with the 22d Infantry Regiment. In November 1944 he was awarded the Bronze Star for "heroic achievement in connection with military operations against an enemy of the United States in the vicinity of Bucher, Germany, in September 1944. At the time when enemy artillery shells were falling within 40 feet of a self-propelled gun, Captain Goldstein, battalion surgeon, led a group of men to the tank destroyer in which a seriously wounded man was wedged. From an unprotected position in the turret of the vehicle, Captain Goldstein directed the safe removal of the wounded man. He then administered medical aid, which undoubtedly saved the man's life. The courage, calmness and devotion to duty displayed by Captain Goldstein are in keeping with the highest traditions of the military service." Captain Goldstein was also awarded the Oak Leaf Cluster to the Bronze Star "for heroic achievement in connection with military operations against an enemy of the United States in the vicinity of Grosshan, Germany, Nov. 29, 1944. While reconnoitering the area near a forward observation post for an aid station location, Captain Goldstein heard the cries for aid from two men wounded in a motor bombardment. At great personal risk he ran to them, administered immediate emergency treatment and carried them to a nearby road, where he had them evacuated to the aid station. While enemy artillery and motor shells were bursting close by, he administered blood plasma, which probably saved their lives. The courage and devotion to duty displayed by Captain Goldstein were instrumental in saving two lives and reflect credit on himself and the military service." Dr. Goldstein graduated from the State University of Iowa College of Medicine, Iowa City, in 1941 and entered the service July 8, 1942.

Major Thomas H. Pennock

The Bronze Star was recently awarded to Major Thomas H. Pennock, formerly of Wilmington, Del., "for meritorious service from April 15 to May 5, 1945 in southern Germany. During this period Major Pennock was assigned the mission of coordinating the medical services for an attached cavalry reconnaissance group in addition to the organic divisional cavalry reconnaissance squadron. Those organizations functioned as a separate combat command and moved rapidly, covering large areas, bypassing strong points of resistance and penetrating as deeply as possible into enemy territory. For this reason evacuation of wounded was necessary through enemy territory and frequently over long distances under very adverse conditions. In spite of these difficulties every wounded man in this organization received prompt medical care, in large measure due to Major Pennock's efforts. Frequently drawing enemy fire and crossing hostile territory, Major Pennock made daily personal contact with all elements of his command and by judicious and resourceful methods so employed the facilities at his command that wounded personnel were treated and evacuated promptly. By conserving the fighting strength of the aforementioned units Major Pennock has rendered meritorious service to this organization." Dr. Pennock graduated from Hahnemann Medical College and Hospital of Philadelphia in 1941 and entered the service Aug. 1, 1942.

Major Karl V. Larson

The Bronze Star was recently awarded to Major Karl V. Larson, formerly of Machias, Maine, who was cited "for meritorious service in connection with military operations against the enemy from June 18, 1944 to May 9, 1945 in France and Germany. Throughout this extended period of combat operations Major Larson demonstrated exceptional professional skill and judgment in performance of his duties as division artillery surgeon. Untiring in his efforts to maintain the physical condition and ever alert to guard against mental fatigue of the members of the division artillery units, his aggressive supervision and

insistence on simple measures to prevent disease were largely responsible for the excellent health of the command. Due to his expert guidance, nonbattle losses were negligible even during the rigorous Alsatian winter campaign, and his activities contributed greatly to the battle efficiency of the organizations under his medical supervision. The unstinting fidelity to duty displayed by Major Larson reflects great credit on the armed forces of the United States." Dr. Larson graduated from Albany Medical College, New York, in 1940 and entered the service Jan. 15, 1942.

Major Vance H. Marchbanks Jr.

Major Vance H. Marchbanks Jr., formerly of Little Rock, Ark., was recently awarded the Bronze Star "for meritorious service in support of military operations against the enemy from Jan. 4, 1944 to May 1, 1945." The citation accompanying the award declared that "Major Marchbanks, by professional skill and untiring effort, maintained an efficient medical center after setting up in an area without facilities. He constructed the medical center from salvaged materials. His sound judgment has contributed immeasurably to the combat achievement of his unit. He displayed profound interest in malaria and venereal disease control along with developing a coordinated program for each which resulted in no new cases of malaria and a decided drop in the venereal disease rate despite the highly infected area in which his unit was located. His knowledge and meritorious performance of duty have reflected great credit on his unit and the armed forces of the United States of America." Dr. Marchbanks graduated from Howard University College of Medicine, Washington, D. C., in 1937 and entered the service March 28, 1941.

Major Paul C. Samson

The Legion of Merit was recently awarded to Major Paul C. Samson, formerly of Oakland, Calif., "for exceptionally meritorious conduct in the performance of outstanding services in North Africa, Italy, France and Germany from March 9, 1943 to May 8, 1945." The citation accompanying the award reported that "as officer in charge of a thoracic surgical center, Bizerte, Tunisia, Major Samson inaugurated many advances in the care of thoracic injuries which became widely adopted in subsequent military campaigns in Europe. Major Samson has performed major surgical operations or supervised such operations on more than 500 severely wounded casualties suffering from injuries to the chest. As a result of his outstanding contributions many severely wounded soldiers suffering from wounds of the lungs recovered and returned to military duty, thereby reflecting great credit on Major Samson and the Medical Corps of the Army of the United States." Dr. Samson graduated from the University of Michigan Medical School, Ann Arbor, in 1928 and entered the service May 10, 1941.

Captain W. Garrett Hume III

For heroic action in which he voluntarily endangered his own life to save others, the Soldier's Medal was recently awarded to Capt. W. Garrett Hume III, formerly of Wilmington, Del. According to the citation accompanying the award Captain Hume, a medical officer with the 15th Air Force in Italy, went to the scene immediately when an ammunition ship exploded in the port of Bari, Italy, and began removing the injured and rendering first aid at the scene of the tremendous blast. "With full knowledge of the possibility that another explosion equally destructive might occur at any time, he courageously entered the most dangerous area and carried injured military and civilian personnel from wrecked buildings, in one instance entering a burning ship to effect the rescue of several persons." Dr. Hume graduated from Temple University School of Medicine, Philadelphia, in 1941 and entered the service in August 1942.

Lieutenant Colonel Harrison S. Collisi

The Bronze Star was recently awarded to Lieut. Col. Harrison S. Collisi, formerly of Grand Rapids, Mich., "for meritorious service in connection with military operations, as commanding officer, 197th General Hospital, European Theater of Operations, from Dec. 29, 1944 to May 8, 1945." Continued the cita-

tion accompanying the award, "Lieutenant Colonel Collisi displayed exceptional ability in organizing and operating the unit hospital at Saint Quentin, France, for the receiving and treatment of troops wounded in combat on the continent. He was responsible for efficiently solving the numerous technical problems which arose in setting up and the operation of this hospital during this period. By his superior organizational ability, untiring efforts and keen foresight in planning, Lieutenant Colonel Collisi established a general hospital which displayed a high degree of perfection and reflects high credit on himself and the armed forces of the United States." Dr. Collisi graduated from the University of Michigan Medical School, Ann Arbor, in 1912 and entered the service May 18, 1942.

Major Duncan A. Cameron

The Bronze Star was recently awarded to Major Duncan A. Cameron, formerly of Brighton, Mich., "for meritorious service in connection with military operations against the enemy as general surgeon, 3d Auxiliary Surgical Group, from June 6, 1944 to Nov. 15, 1944 in France, Belgium and Germany. Since landing on the European continent on D day, Major Cameron displayed marked professional skill and great personal vigor in the performance of innumerable surgical operations. He often continued his medical duties for extremely long periods of time in order to perform immediate life-saving operations on battle casualties. By his sound medical knowledge and unswerving devotion to duty Major Cameron reflected credit on himself and the military service." Dr. Cameron graduated from Wayne University College of Medicine, Detroit, in 1933 and entered the service Oct. 2, 1942.

Lieutenant Colonel Robert W. Lloyd

The Bronze Star was recently awarded to Lieut. Col. Robert W. Lloyd, formerly of Portland, Ore., for services during the hard fighting with the 10th Mountain Unit in the Apennines of Italy last winter. "His superlative performance during the period was characterized by a conscientious devotion to duty, with meticulous attention to the sick and wounded. . . . He maintained a high state of discipline and morale among the men under his command, many of whom were frequently required to work long hours without rest under distressing conditions. He played a major role in providing efficient medical support to the combat troops within the division, bringing him much praise and commendation." Dr. Lloyd graduated from the University of Oregon Medical School, Portland, in 1934 and entered the service Dec. 1, 1938.

Captain Blaine Carey

The Bronze Star was recently awarded to Capt. Blaine Carey, formerly of Nebraska City, Neb., for "meritorious service with the 26th Infantry Division." Dr. Carey graduated from the University of Nebraska College of Medicine, Omaha, in 1943 and entered the service Jan. 20, 1944.

Captain Herbert F. Staubitz

Capt. Herbert F. Staubitz, formerly of Omaha, was recently awarded the Bronze Star for performance of duties as receiving officer of the 128th Evacuation Hospital in Germany. Dr. Staubitz graduated from the University of Nebraska College of Medicine, Omaha, in 1932 and entered the service Sept. 7, 1943.

MISCELLANEOUS

AMERICAN RED CROSS HEALTH SERVICES ADVISORY BOARD

Basil O'Connor, national Red Cross chairman, recently announced the appointment of an Advisory Board on Health Services to coordinate activities of the American Red Cross in the health field. Dr. Lewis H. Weed, Baltimore, was named board chairman; he is also chairman of the medical sciences division of the National Research Council and director of Johns Hopkins University School of Medicine, Baltimore. The committee consists of 109 men and women from twenty-five states and the District of Columbia and includes not only physicians but nurses, dentists, health educators, medical and psychiatric social workers, hospital administrators and others. The three members of the board who will serve as vice chairmen are Dr. Roger I. Lee, Boston; Dr. John D. Lyttle, Los Angeles, and Dr. John Romano, Cincinnati. The executive committee includes as vice chairmen George Baehr, New York, and Kenneth I. Maxcy, Baltimore, and as secretary Henry R. Viets, Boston. The members are Amos Christie, Nashville; Miss Ruth Emerson, Chicago; Everts A. Graham, St. Louis; Morris Fishbein, Chicago; Ira Hiscock, New Haven, Conn.; Charles C. King, New York; Basil MacLean, Rochester, N. Y.; Walter Scherer, Houston, Texas; Miss Mirian W. Sheahan, Albany, N. Y.; Ernest L. Stebbins, New York; Edward A. Strecker, Philadelphia, and Abel Wolman, Baltimore. The first meeting of the board's executive committee will be held in Washington, December 15. The entire board will meet at least once a year. Major Gen. Norman T. Kirk, surgeon general of the Army, Vice Admiral Ross T. McIntire, surgeon general of the Navy, and Thomas Parran, surgeon general, U. S. Public Health Service, were named ex officio members of the general board.

FELLOWSHIPS OFFERED IN NEUROPSYCHIATRY

The Austin Riggs Foundation, Stockbridge, Mass., recently announced that fellowships for three years' training in neuropsychiatry are now open. Army personnel who wish to go into the field of neuropsychiatry may apply to Dr. Charles H. Kimberly, Medical Director, Austin Riggs Foundation, Stockbridge, Mass.

MEDICAL AND SURGICAL RELIEF COMMITTEE OF AMERICA, INC.

The Medical and Surgical Relief Committee of America, Inc. (420 Lexington Avenue, New York 17), recently sent a stationary x-ray machine and accessories, donated by Brig. Gen. Theodore Roosevelt, to France for the use of returned soldiers. The x-ray bears a bronze plaque including the names of the French troops with whom General Roosevelt served in both World War I and II, together with dates of his service and a list of his decorations.

NURSES NATIONAL MEMORIAL TO BE ERECTED IN WASHINGTON

A \$2,000,000 Nurses National Memorial is to be erected in Washington, D. C., in tribute to the devotion and sacrifice of the war nurses and medical women of World War II. The Memorial Committee, with headquarters at 825 Woodward Building, Washington, D. C., announced that the proposal to honor the heroic nurses with a living, practical memorial has struck a responsive note from people in all walks of life. Mrs. Norman T. Kirk, wife of Major General Kirk, Surgeon General of the United States Army, who conceived the project, and who herself served as an army nurse in World War I, said:

"When the proposal to build and endow a Nurses National Memorial in Washington to help the war nurses throughout the years is fully understood, we hope the funds will be forthcoming.

"The memorial will be a center for war nurses. It will be their 'home' when they are in the capital city. Those who need a rest period from their nerve and body racking work in war and in peace will find it here.

"Those who seek educational work and who come here for special courses will make the memorial their center of activities.

"Such a building is urgently needed. It will provide these facilities for the medical women at very low cost of the food served. This is a purely volunteer effort but we will find the way to make it a reality."

Arrangements are being made by the executive committee for a luncheon early in December, when detailed plans for speeding the campaign will be formulated.

ORGANIZATION SECTION

MINUTES OF THE ANNUAL SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN CHICAGO, DECEMBER 3-5, 1945

HOUSE OF DELEGATES

First Meeting—Monday Morning, December 3

The House of Delegates convened in the Red Lacquer Room of the Palmer House and was called to order at 10:15 a. m. by the Speaker, Dr. H. H. Shoulders.

Preliminary Report of the Reference Committee on Credentials

Dr. G. Henry Mundt, Chairman, stated that 160 delegates were registered at this time. Dr. Mundt requested that officers and members of official bodies of constituent state and territorial medical associations be registered in attendance. The Speaker stated that no official registration was required of them since they could listen in and have their say at any reference committee meeting. The Secretary announced that he would try to make arrangements for such registration.

Roll Call

The Secretary called the roll and announced that a quorum was present.

Distinguished Service Award

Dr. James R. Bloss, Chairman of the Board of Trustees, presented a report of the Board, as follows:

The Committee on Distinguished Service Award of the American Medical Association submitted five names to the Board of Trustees.

In accordance with chapter VI, section 5, of the By-Laws, the Board has selected by ballot the following names for presentation to the House of Delegates in alphabetical order: Dr. Isaac A. Abt, Chicago; Dr. A. J. Carlson, Chicago; Dr. George R. Minot, Boston.

The Speaker appointed as tellers Drs. Thomas A. Burcham, Chairman, Iowa; Dr. Frank R. Mount, Oregon; Dr. Lee O. Frech, Illinois; Dr. Walter P. Anderton, New York, and Dr. Alex M. Burgess, Rhode Island.

The tellers spread the ballot, and the Secretary announced that one hundred and fifty-six votes had been cast, of which Dr. Abt received forty-nine, Dr. Carlson forty-five and Dr. Minot sixty-two.

The Speaker announced that, since no one nominee had received the majority of the votes cast, the name of the one receiving the lowest number of votes would be dropped and ballots prepared for Drs. Abt and Minot.

The Secretary stated that one hundred and fifty-two votes had been cast, of which Dr. Abt received fifty-six and Dr. Minot ninety-six.

The Speaker declared Dr. George R. Minot, who had received the majority of the votes cast, to be elected by the House of Delegates to receive the Distinguished Service Award of the American Medical Association.

Adoption of Proceedings of Chicago Session in 1944

On motion of Dr. Thomas S. Cullen, Maryland, duly seconded and carried, the proceedings of the Chicago Session of the House of Delegates held in 1944 were adopted as printed.

Address of Speaker, Dr. H. H. Shoulders

The Vice Speaker, Dr. R. W. Fouts, Nebraska, presided while the Speaker read his address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker, Members of the House of Delegates and Guests:

Without a doubt the physicians of this country now have the confidence and respect of the general public to a higher degree than has been the case for a long time, if not for all time. This is desirable from the point of view of the public interest as well as from that of the medical profession. Organized medicine still has its critics, of course, and no doubt always will have them as long as it refuses to bend its knees to those who would rule it from without. These critics, however, are less numerous and certainly less potent than they were not so long ago. I mention this fact not merely to point with pride, but rather to consider briefly the influences and factors that have played an important part in achieving for medicine this public esteem.

It would be difficult, if not impossible, to identify all the factors that have played some part in producing this esteem, and still more difficult to appraise accurately the importance of each. Here are a few of the factors that I believe are of the greatest importance:

1. Better public relations. Excellent work in the field of public relations has been done by individual members and by official agencies of the Association, with beneficial results.

2. The education of the public. Programs designed to acquaint the public with the meaning and value of good medical care and as to what constitutes good medical care have been fruitful of good results.

3. Progress in the science and art of medicine. Great progress has been made in the science of medicine and in the art of applying it to the needs of humanity. We doctors are now in a position to render services we could not render a few years ago. Our services are more effective and beneficial than they have ever been previously.

4. The factor of paramount importance, one which in all justice and propriety may be called the soul of medicine.

I would not attempt a specific definition of the word "soul". No one has ever supplied a precise and generally accepted definition; yet we all recognize its existence in the human being and the possibility of its existence in a human organization. No one has been able to determine the place of the soul in the mechanism of the body. I certainly would not attempt to designate its location or even its possible location in this organization. In fact its attributes are so apparent throughout the organization that it would be folly to attempt to assign to it a specific location. The presence of a soul in an individual or organization is recognized by its humane attributes, such as charity, courage, lofty ideals and loyalty to them, and a genuine interest in the welfare of fellow human beings. The soul of medicine is not of recent conception. It appeared when medicine began as a profession. The ideals and principles to which young physicians dedicated themselves in the time of Hippocrates and the original code of ethics could have had no other origin.

The ideals and purposes set forth in the constitution of this Association furnish adequate proof that the soul of medicine has lived through the centuries. There is ample proof that it has survived to this day. In the last fifteen years our nation has passed through many crises, including the worst depression within the memory of men now living and the most gigantic war in all history. There have been many times that have "tried men's souls." The soul of medicine has been tried also and not found wanting. Medicine has never been willing to sell its soul for a mess of pottage.

To recite but a few of the acts of heroism, sacrifice and charity by members of the medical profession in this period

would consume many hours; I shall not mention resistance to temptations to which many another have succumbed. The lamented Ernie Pyle through his touching record of this war gave the public a fleeting glimpse of the devotion and sacrifice of doctors in the military service and what that devotion and sacrifice meant to soldiers on the battle fronts. We know something of those who rendered their services in the less glamorous atmosphere of the home front. They too served beyond the call of duty and many beyond the limits of endurance. In times of depression more than any other time the soul of medicine has opportunities and occasions to find expression. In many different ways it speaks to the people who grasp something of its significance in the delivery of the services we call medical care. In literature, both sacred and profane, we read that a soul may be lost or sold—that a soul may vary in its dimensions. To the preservation of the soul of medicine and the great dimensions that it has achieved we dedicate ourselves ever anew.

As I view the future I see that the soul of medicine will still be tried. Possibly the attention of physicians for the moment may become so sharply focused on some economic issue or proposal of political expediency that the soul may be lost to sight. This would be a tragedy of the first magnitude.

Sociologists, economists and political scientists have made strenuous attempts to bring medicine under the domination of one or all of these groups through the mechanism of legislative enactment. Their efforts have failed. Their lack of success, in my opinion, is due not so much to the fact that their proposals were untried and impractical as to their failure to recognize and take into account the soul of medicine.

The responsibility for the continued preservation of the best in American medicine still rests largely in the hands of this House of Delegates. Let us again, now as in the past, concern ourselves, with advancing the science of medicine, with maintaining the standards of medical education and with delivering a higher quality of medical service, ever mindful that science without a soul may be cruel and inhumane, whereas science possessed of a soul is the very highest achievement—the apotheosis of humanity.

In Memoriam

The Speaker resumed the chair and requested the Vice Speaker to read the list of names of members of the House of Delegates and/or officers of the American Medical Association notice of whose death had been received since the 1944 Chicago session.

The Vice Speaker read the list of names as follows:

(The dates following the names indicate years of service in the House or as officers of the Association)

Benjamin F. Bailey, Nebraska, 1930-1937
 Samuel C. Baldwin, Utah, 1904-1905; 1908.
 Edgar G. Ballenger, Georgia, 1912.
 Philip F. Barbour, Kentucky, 1936
 Eben H. Bennett, Maine, 1912-1913.
 Hugh Cabot, Massachusetts, 1911-1915.
 Byron M. Caples, Wisconsin, 1905-1908, 1911.
 Walt P. Conaway, New Jersey, 1931-1938 First Vice President, 1913-1914.
 James H. Corwin, Pennsylvania, 1934, 1942-1943.
 James M. Dinneen, Indiana, 1913-1914.
 Edwin D. Ebricht, Kansas, 1926.
 David L. Edsall, Boston, First Vice President, 1919-1920
 John W. Flinn, Arizona, 1920, 1922.
 George Edwards Tollansbee, Ohio, 1919-1922, 1924-1930. Member Judicial Council, 1925-1945; Chairman, 1928-1945
 Oscar M. Gilbert, Colorado, 1928-1929
 William A. Groat, New York, 1939-1940, 1942.
 John T. Herron, Tennessee, 1904-1905.
 Michael Hoke, Georgia, 1908
 Lawrence C. Ingram, Florida, 1932.
 Peter Irving, New York, 1938-1940.
 John L. Jelks, Tennessee, 1911.
 John E. Jennings, New York, 1931.
 Elmer L. Kenyon, Chicago, Section on Laryngology, Otology and Rhinology, 1917.
 J. Richard Kevin, New York, 1920-1925; 1927-1931, 1935-1936
 William A. Krieger, New York, 1942.

John Leeming, Chicago, Second Vice President, 1916-1917.
 Michael M. Lucid, New York, 1915.
 Charles MacLachlan, North Dakota, 1916; 1918; 1929-1930.
 Van Newhall Marsh, Ohio, 1938.
 Joseph McFarland, Philadelphia, Section on Pathology and Physiology, 1905-1906.
 Frederick W. Meyer, Philippines, 1937-1938.
 Douglas C. Moriarty, New York, 1907-1909.
 William A. Mulherin, Georgia, 1942-1944.
 John Q. Myers, North Carolina, 1920-1921; 1937-1939.
 Edwin M. Neher, Utah, 1922; 1924; 1926-1928.
 J. Mark O'Farrell, Texas, 1920.
 Richard F. O'Neil, Boston, Section on Genito-Urinary Diseases, 1912.
 Edward M. Pallette Sr., California, 1933; 1935-1936; 1938-1942. Member Board of Trustees, 1942-1944.
 Edward C. Podvin, New York, 1941-1943.
 Leonard G. Redding, Pennsylvania, 1940-1943.
 Charles M. Rosser, Texas, 1929; 1931.
 Charles J. Smith, Oregon, 1905; 1910-1911.
 Alexander H. Stewart, Pennsylvania, 1942-1944.
 Samuel W. S. Toms, New York, 1911; 1913-1914.
 George E. Tooley, Kansas, 1908.
 Philemon E. Truesdale, Massachusetts, 1929.
 James B. Vaughn, South Dakota, 1922-1923.
 John A. Walker, Oklahoma, 1910.
 James T. Wayson, Hawaii, 1905
 William K. West, Michigan, 1905.
 Sidney J. Wolfermann, Arkansas, 1944.
 David I. Wolfstein, Cincinnati, Section on Nervous and Mental Diseases, 1905.
 Hugh Young, Maryland, 1910; 1914; 1926.

On request of the Speaker, the House stood in silent tribute to the memory of those of its members and of officers of the Association who had died since the Chicago session of the House in 1944.

Reference Committees

The Vice Speaker resumed the chair and requested the Speaker to proceed with the appointment of his reference committees.

The Speaker read the list of appointments and requested permission to appoint four additional reference committees, as follows: Reference Committee on Executive Session, Reference Committee on Postwar Planning, Reference Committee on Medical Care of Veterans and Reference Committee on Industrial Health.

It was moved by Dr. E. S. Hamilton, Illinois, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, that the House approve the appointment of the four additional reference committees requested by the Speaker.

The personnel of all reference committees as appointed by the Speaker was as follows:

SECTIONS AND SECTION WORK

William Weston, Chairman, Section on Pediatrics

James Beebe, Delaware Warren L. Allee, Missouri
 Hugh P. Smith, South Carolina Olin H. Weaver, Georgia

RULES AND ORDER OF BUSINESS

Francis T. Borzell, Chairman, Pennsylvania

E. G. Wood, Tennessee Samuel J. McClendon, California
 T. S. Crockett, Indiana Lucius F. Donohoe, New Jersey

MEDICAL EDUCATION

Fred M. Smith, Chairman, Section on Practice of Medicine

Thomas S. Cullen, Maryland Leon J. Menville, Louisiana
 George W. Kosmak, New York A. W. Adson, Minnesota

LEGISLATION AND PUBLIC RELATIONS

Edwin S. Hamilton, Chairman, Illinois

Lloyd Noland, Alabama Edward L. Bortz, Pennsylvania
 John J. Masterson, New York Raymond L. Zech, Washington

HYGIENE AND PUBLIC HEALTH

Felix J. Underwood, Chairman, Mississippi

Warren F. Draper, U. S. Public Health Service Walter E. Vest, West Virginia
 D. F. Cameron, Indiana Creighton Barker, Connecticut

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Carl R. Steinle, Chairman, Ohio

Karl S. J. Hohlen, Nebraska George P. Johnston, Wyoming
 Thomas A. Foster, Maine Ross S. McElwee, North Carolina

REPORTS OF OFFICERS

Floyd S. Winslow, Chairman, New York

Thomas K. Lewis, New Jersey Harold W. Smith, U. S. Navy
 Deering G. Smith, New Hampshire George H. Curfman, Colorado

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Thomas A. McGoldrick, Chairman, New York
William A. Coventry, Minnesota Dwight O'Hara, Massachusetts
J. B. Lukins, Kentucky Thomas F. Thornton, Iowa

CREDENTIALS

G. Henry Mundt, Chairman, Illinois
H. B. Everett, Tennessee Howard R. Dudgeon, Texas
Charles R. Rountree, Oklahoma Edward N. Roberts, Idaho

MISCELLANEOUS BUSINESS

James R. Reuling Jr., Chairman, New York
Stephen E. Gavin, Wisconsin Leonard W. Larson, Section on
Henry A. Luce, Michigan Pathology and Physiology
William Bates, Pennsylvania

EXECUTIVE SESSION

Walter F. Donaldson, Chairman, Pennsylvania
Edward Jelks, Florida Thomas P. Murdock, Connecticut
James R. McVay, Missouri Clark Bailey, Kentucky
William R. Brooksher, Arkansas Allen H. Bunce, Georgia

POSTWAR PLANNING

Charles H. Phifer, Chairman, Illinois
J. Stanley Kenney, New York Harry V. Paryzek, Ohio
Leo G. Christian, Michigan B. R. Kirklin, Section on Radiology
F. J. L. Blasingame, Texas J. Morrison Hutcheson, Virginia

MEDICAL CARE OF VETERANS

Walter G. Phippen, Chairman, Massachusetts
Forrest L. Loveland, Kansas Leland S. McKittrick, Massachusetts
James C. Sargent, Wisconsin Parke G. Smith, Ohio
Henry R. Viets, Section on Nervous and Mental Diseases Britton E. Pickett Sr., Texas

INDUSTRIAL HEALTH

William L. Estes Jr., Chairman, Pennsylvania
Oliver W. H. Mitchell, New York Dwight H. Murray, California
Stanley H. Osborn, Section on Preventive and Industrial Medicine James O. Graves, Louisiana
and Public Health James P. Kerby, Utah
Barney J. Hein, Ohio

TELLERS

Thomas A. Burcham, Chairman, Iowa
Frank R. Mount, Oregon Walter P. Anderson, New York
Lee O. Frech, Illinois Alex M. Burgess, Rhode Island

SERGEANTS-AT-ARMS

Frank E. Reeder, Chief, Michigan
A. P. Nachtwey, Assistant, J. D. Hamer, Assistant,
North Dakota Arizona

Address of the President, Dr. Herman L. Kretschmer

The Speaker resumed the chair and presented the President, Dr. Herman L. Kretschmer, who delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

The realization that my term of office is about to come to a close and that this is my last opportunity to address the House of Delegates naturally creates a feeling of sadness. However, the honor and privilege to serve you during the past two years have given me joy and satisfaction and more than compensates.

May I take this opportunity to praise those members of our profession who have been ever willing to do the "leg work" for American medicine and who at a great sacrifice of time and comfort do the many chores requested of them. These physicians many times perform an indispensable function. By the nature of their tasks, their activities are little known to the profession at large; yet they render outstanding service to you and to me and their praises are rarely sung.

I should like also to commend those who serve on special committees and those who tour the nation speaking to medical societies and lay audiences, often at a great sacrifice of time from their practices.

I view with alarm the gross indifference of so many of our members, eminent and successful practitioners, specialists and those who hold responsible teaching and other positions who do not manifest any interest in the work of their county or state society, much less in the activities of the American Medical Association. It seems to me that it is high time for them to take an active interest in the affairs of American medicine. They should ask themselves the question What can I

do for American medicine? instead of What can American medicine do for me? I would urge the younger men especially to take an active interest in their county and state societies and so gradually work into the affairs of the American Medical Association. It is they who must guide the destinies of American medicine in the years to come.

REGIMENTATION OF THE PRACTICE OF MEDICINE

The tendency in this country to enact legislation toward regimentation of the patient and the physician is of the greatest importance to every man, woman and child. This tendency is equally important to the medical profession, to business, to industry and to labor. It should be perfectly clear to every one that regimentation always leads to totalitarianism, and it always begins under one guise or another with medical practice. It is insidious in onset and progressive in its course, and the fatal result is regimentation of labor and business as well as of the practice of medicine.

Those most vociferous in favor of regimented medicine formerly pointed with pride to Germany as a country which was the furthest along with social legislation. Since it has led to totalitarianism and the complete collapse of Germany, they no longer hold her up as an example of regimentation of medical practice.

One might rightly ask Since when have the American people suddenly become so sick and so incapable of taking care of themselves? Since when have our people become so dependent as to need security from the cradle to the grave? I don't think they have. I believe the pioneer spirit of our people is not gone. I feel that the average American wants to establish his own security and select his own physician. If you don't believe that, talk to the returning G. I's.

The American Medical Association, since its founding nearly one hundred years ago, has always been interested in raising the health standards of our people. We as physicians know better than any one else that a healthy nation is a happy and a strong nation. With the objective of improving the health standards of the people we have no disagreement with any one. We, however, disagree wholeheartedly with the technic at present advocated to attain this end. When will the legislator, the "do gooder" and others learn that disease cannot be cured by the passage of laws?

It is interesting to note that the strongest pressure to upset the present-day system of practice comes from areas with the largest number of doctors, hospitals and medical schools.

How then can the problem be met? Not by upsetting the system that has made the people of this country the healthiest in the world. The solution is not in the passing of laws and the institution of a system that will lower the quality of care; it is by doing exactly what is done with the sick patient—namely, to make a careful examination of the patient to locate and determine the cause of his illness and to institute the correct treatment. Exactly the same technic can be applied to this problem. When an epidemic arises in a town we don't burn down the town. When a factory falls off in production and efficiency, the causes are determined and corrected. The manufacturer does not tear down the factory and build a new one.

And so the solution of this problem is to determine the site and causes and to institute corrective measures, going about it in an "honest," efficient way. The American Medical Association through its Council on Medical Service and Public Relations has taken a long step forward. The various state medical societies likewise are on the move. I believe that this House of Delegates should make our position very clear. I believe that the House of Delegates, speaking for more than 125,000 physicians of this country, should make it perfectly clear that the physicians are the ones who render medical care, that the physicians of this country will not be regimented and that when chaos in medical care arises the people will have had ample warning of what lies ahead. Let our position be clearly defined.

I believe that your Council on Medical Service and Public Relations, in cooperation with other groups, can find the answers to these problems if they are given the opportunity to do so.

CHANGES IN THE PROGRAMS OF THE COUNTY
MEDICAL SOCIETY

The county medical society must always remain the basic unit in our medical organization. For many years there has been little change in the program and activities of county medical societies. With the changing trends in medical practice, this is a good time to take inventory and to make whatever changes are necessary in the work of the county medical society to make its work more efficient:

1. The scientific program might with great advantage be enlarged or expanded. Instead of having each county medical society conduct a scientific program once a month, it might be better to have *scientific meetings of six or eight or ten adjoining counties*. Then the program could be arranged as an all day and evening scientific program. This would ensure a large gathering, better speakers and a better coordinated program. Such a program could be planned to cover many topics, and the subjects could be presented from a postgraduate point of view.

2. The regular organizational meetings of the county medical society could then be devoted wholly to such problems as are ethics, economics and organization.

3. With this rearrangement of the workings of the county medical society, meetings should be devoted to the interests of the public at which timely educational topics could be presented to a lay audience. Moreover, meetings could be held in association with the social service, relief, political, public health and similar groups. Here the position of the medical profession on many of the present-day controversial problems could be presented to the laity on an educational basis.

THE X-RAY FILM QUESTION

During the course of the year I see many patients who have had elsewhere recent x-ray films, including intravenous pyelograms. Instead of repeating these studies, I suggest that the patient bring in his films, so that, if they are satisfactory, expensive repetition may be avoided. When the patient tries to obtain his films, some physicians, hospitals and roentgenologists refuse to release them. The result is that the patient is irked, an expensive procedure must be repeated and enemies are made for the medical profession.

These attitudes are leading to a great deal of dissatisfaction on the part of both patients and physicians and indirectly encourage those who would regiment medical care.

There must be some solution to this problem. The House of Delegates should clarify the issue. I am sure you will agree with me that this situation needs correction.

THE HORMONE SITUATION

Among the problems demanding prompt consideration by official bodies in American medicine is the present confused hormone situation. I have only the greatest admiration for the workers in this field—the biochemist, the physiologist, the pharmacologist and some of the clinicians, all of whom have made wonderful contributions to our knowledge and understanding of the entire subject of *endocrinology*.

Associated with this great achievement many situations have arisen that need correction because they are leading to gross abuses. Medicine is, as we all know, subject to fads. Unfortunately there is now a tendency to consider every obscure complaint as being of endocrine origin, if it is not psychosomatic or neuropsychiatric or even due to a deficiency of vitamins. Many physicians and laymen seem to believe that anything that is immediately unexplainable must be of endocrine origin and requires hormone therapy.

The medical profession and the public hear much of the "male climacterium," a term which in my opinion serves too frequently as a catchall for anything and everything that happens to a middle aged man that is in the least bit obscure. When one reviews the long list of symptoms ascribed to this condition, one finds nearly all the symptoms listed in the textbooks except housemaid's knee, and I don't know why it is not included.

I have seen patients with obscure lesions of the prostate given long courses of hormone injections. I have seen patients

with mental problems, with family incompatibility, with fear complexes and with impotence, both psychic and prostatic in origin, for whom diagnoses of male climacterium were made and who were advised to take long courses of hormone therapy. Castrated patients without any subjective symptoms have been advised to have hormones so as to make them fertile. The injection of hormones for undescended testis has also been subjected to misuse. Such use has been tragic in many instances.

Why is it that we must see so frequently the advancement of new ideas and technics subjected to abuse? When will we learn to differentiate between experimental and established treatment, between advertising puffery and established facts? When will we learn to look on the patient as an individual and not as a catchall for shotgun treatment? Hormones have great possibilities, but let us not help to turn their use into another vitamin-like fiasco.

People have become hormone conscious and request hormone injections for any and all complaints. Not only does the medical profession have a serious obligation to correct these abuses in their practices, but the editors of health columns, scientific writers in lay periodicals and the purveyors of these products have an obligation in the prevention of the dissemination of wrong information. The "elixir of life" has not yet been found. If those who educate do not meet their responsibility, they must shoulder the blame when harm is done.

ANIMAL EXPERIMENTATION

One of the subjects which I believe should receive your earnest consideration is the need to educate our people on the subject of animal experimentation. You are just as familiar as I am with the recurring attacks against animal experimentation. The prevention of these recurring attacks must be a continuing program of education. I am sure that, once the public has realized the value and the far-reaching results of animal experimentation, we will gain their confidence and support. Such an educational program must be far-reaching and not sporadic. It should be projected for many years, not just when the need arises. The public should be told that the antivivisectionists throttle research by playing on the emotions of the people. As a result of the sentimental activities of the antivivisectionists, the public has not been informed as to the true facts of animal experimentation, particularly that both man and animals are the benefactors.

I believe that the county medical society should take the lead and cooperate with the state medical society. Unless a definite, long range program is carried out, medical science will be stifled to the detriment of the patient. The use of the radio, newspapers and motion pictures favorable to animal experimentation should be extended. Perhaps the time has come when medicine should take the offensive and obtain enabling legislation rather than to remain ever on the defensive.

THE MARIHUANA PROBLEM

Acutely before the nation today is the problem of marihuana. As guardians of the public health and as purveyors of information to those seeking it, the American Medical Association should take the leadership in securing the scientific studies necessary to positive conclusions.

There is a good deal of confusion and difference of opinion on this subject. Some glibly dismiss the harmful effects from marihuana. Others are firm in their convictions that the use of marihuana is dangerous. We as physicians who are interested in safeguarding the health of the people of this country should be deeply concerned. Law enforcement officers, legislators, judges of the courts, lawyers and social workers are equally interested. They naturally look to the medical profession for guidance. The reports on the rapidly increasing spread of the use of marihuana are conflicting. What is the layman to do in seeking an answer to this problem when diametrically opposing statements are made? Where should law enforcement officials turn for proper guidance? I believe that this problem with its far-reaching implications is deserving of your earnest consideration. To whom if not to the American Medical Association shall those interested in this problem turn for authoritative information? I myself believe that the marihuana habit is not harmless. Evidence has been

presented to show that the use of marihuana has resulted in the sudden unbalance of the mind and with it the commission of a crime. Let us take an active interest in this subject and establish data through the American Medical Association that will be authoritative and available to all interested.

THE DEFERMENT OF MEDICAL STUDENTS

The Council on Medical Education and Hospitals and the House of Delegates must take great pride in the results of the establishment of the certifying boards. By this accomplishment there were made available for the armed forces lists of certified specialists, so that our military officials were able to render the best possible medical and surgical care to the men and women of our armed forces. The Board of Trustees rendered an outstanding service when it undertook to classify all physicians of this country and so was ready to supply the armed forces with available medical personnel. Contrast these achievements with the haphazard procedures followed in the handling of premedical and medical students. These procedures have led to confusion and chaos, and as a result there will be a great shortage of physicians in the postwar era.

I would urge this House of Delegates to take positive action and to demand that a similar situation be not permitted to arise again. We will find in this action the complete support of engineers, chemists, physicists, mathematicians and, in fact, the members of every scientific profession, since all branches of science have suffered and are still suffering from this amazing stupidity of our governmental leaders.

THE PROBLEM OF CHRONIC ILLNESS

The care of the patient with chronic illness is not a new problem, as many would have us believe. Nevertheless the ever increasing number of persons who reach the time of life when many of these diseases begin to manifest themselves puts new emphasis on this situation. The great advances of medicine, which have increased the span of life from 42.5 years in 1900 to 64.5 in 1942, have multiplied tremendously the diseases of advanced years seen by physicians. As the span of life will continue to increase, so will the number of patients who suffer from the degenerative diseases increase. The medical profession has given much study to these problems and as a result geriatrics, a new branch of medicine, was born.

Chronic illness carries with it serious social and economic, as well as medical, problems.

We as physicians are vitally interested in this problem. I believe that this House of Delegates should give serious study to the demands created in the field of geriatrics. What constitutes chronic illness? What is the difference between illness that is chronic and incapacitating and that which, while chronic, does not necessarily prevent the patient from earning a livelihood? What should be the obligation of the family, of industry and of the state in this problem?

THE RETURNING MEDICAL OFFICERS

Although the Association has given serious study to the problems of the returning medical officers, some problems have arisen that it could not foresee. The study and expansion of postgraduate facilities and the establishment of the Bureau of Information have been very helpful to the returning officers. There are several problems that are deserving of your earnest consideration. I refer to the difficulty on the part of these men to obtain suitable office space and suitable hospital appointments. These men have served in the armed forces at a great sacrifice. They have performed a great patriotic service and should be given all the help possible. The question of rearranging one's office hours should be simple. The difficulties often placed in the way of these men in obtaining hospital appointments is something that deserves your earnest consideration. In many hospitals the privilege of being a member of the staff or the privilege of bringing patients to the hospital is contingent on membership in the county medical society. In some places returning medical officers have been placed on probation for one or two years. This practically closes to them the doors of the hospitals. The procedure is unwarranted, unfair and un-American.

For a quarter of a century I have been officially connected with the American Medical Association through positions held in the county, state and national societies. In this period problems that seemed wellnigh insuperable have arisen and have been considered by the House of Delegates. Many of the situations which confront us today were being viewed with alarm and despair in 1918 and 1919, when my first official relationships were made. As I view the years that have passed, we have not given an inch of ground to the opposition but have gone steadily forward, advancing medical science, extending medical service and gaining leadership in all the world for American medicine. This is no time for retreat. Let us go forward in the firm belief that we are waging a battle for the right, for the ideals on which medicine must stand or fall, for the advancement of the science of medicine and for the elimination of unnecessary suffering and disease.

Address of the President-Elect, Dr. Roger I. Lee

The Speaker presented the President-Elect, Dr. Roger I. Lee, Boston, who delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

Your President-Elect would indeed be an ingrate if he did not express formally on this occasion his deep and abiding acknowledgment of the very great honor that you have conferred on him. This House of Delegates is the duly accredited body representing the greatest and most important as well as the largest medical association in the world. I believe that the medical profession is the noblest of all the professions. I know, as all men know, that American medicine is at this day and date incomparably superior to medicine elsewhere. To be selected as President-Elect of the American Medical Association is at once flattering and brings a glow to one's pride, but it is also sobering and awesome. Some better man has said that great institutions have the potentiality of permanent life. They are rarely killed, they rarely commit suicide, but if they die they usually die of dry rot. And dry rot does not occur in an organism or organization that is healthy, growing, active and purposeful. In my long and intimate connection with this Association, vigorous growth and tremendous expansion have been its outstanding characteristics.

It is not my intent to pursue further this vein of thought. It is rather to beg your indulgence and embark on a discussion which may seem presumptuous on my part. I have been interested in and concerned with the improvements in and for the medical profession all my medical life. I early came to the conviction that, by and large, high standards of professional activity, like high standards of personal conduct, actually come from within. Hence began my interest in doctors as a group. It is a commonplace too often forgotten that professionals and experts are the only ones qualified to set up professional and expert standards. Obviously at those points where the professions touch the public or the laity, such public contacts and relations are not exclusively the concern of the professionals, but the technical standards within the profession belong to the profession.

It may be of little interest to you, but I first sat in this House of Delegates in 1910. It was, however, a number of years later that I became, as it were, a regular member of the House of Delegates. For the last ten years, by your election, I have served on the Board of Trustees. Over these years I have observed many things, and some of these reflections I want to give to you.

I have been through the well known phases so well described by a late member of Congress. At first he wondered why he was there, in such an august body, then he wondered why in — these other fellows were there and finally came to the conclusion that it was a good thing that all men (including Congressmen) were not made in the same mold and that there were good reasons for all of them being there, even if in a very few instances the reasons seemed somewhat obscure.

There can be no doubt, I think, that the House of Delegates of the American Medical Association is a truly democratic body and functions in a truly democratic fashion. For myself I believe that the Delegates are elected in the spirit of democracy. Even if it were not so, the remedy lies elsewhere.

Perhaps the most common adverse comment on the House of Delegates and indeed on the American Medical Association relates to what is called insufficient infusion of younger men, of young blood into the House of Delegates. As I have said, the remedy does not lie in this House of Delegates but elsewhere, namely in the constituent associations. This may be an appropriate time to discuss this problem, because with many of the younger Fellows not yet released from the armed forces considerable changes can hardly be put into operation at this moment. But certainly with the return of those Fellows who were fortunate enough to be allowed to put on the uniform, prompt recognition of these younger men should be made by placing them on the councils and committees of the Association.

As to the House of Delegates, the question of rapid change in the personnel may well be debatable. There are advantages of continuity of service beyond doubt, but there are advantages too of steady, even if not rapid, changes in the personnel of the House. Personally, I am a believer in the general policy of steady change. I regard it as a particularly wise provision that the Trustees of the Association are permitted by the Constitution to serve only two consecutive terms. Since human nature is as it is, too often the replacement of an older man by a younger man is too often regarded as a deliberate insult even when perhaps only membership on a not very important committee is involved. But it is wise and desirable that as many Fellows of the Association as feasible be encouraged to participate in the affairs of the Association. Even as I look over this distinguished House of Delegates, I have to blush on account of my own antiquity of service. And while I may have some company and I am sure it is very select, it is hardly a corporal's guard.

It is a pet phrase of many that a democracy is of necessity inept, cumbersome and slow. That certainly has not been my observation in the case of the House of Delegates of the American Medical Association. It turns out a vast amount of business in an astonishingly short time. To be sure, like all democracies it is not given to hairtrigger decisions. Yet a study of its decisions leads, I believe, to the inescapable conclusion that they are sound and that the decisions are in step with the times and generally carefully evolutionary rather than recklessly revolutionary. There is less of the mob psychology in the actions of the House of Delegates than in most democratic bodies, including university faculties with which I am familiar. It is, I think, sound democratic dogma that the approval of the representative body, i. e. the House of Delegates, is, by chapter XVII of the By-Laws required for "the issuance of any memorial, resolution or opinion of any character whatever" in the name of the American Medical Association.

I have found that few of the profession and almost none of the laity seem to grasp the inflexible but democratic principle stated in chapter XVII of the By-Laws. Although it has been stated and restated to the point of monotonous reiteration, it is often regarded even by those who should know as a subterfuge. This democratic principle rightly applies to all, whether officer or Fellow, whether President (or President-Elect) or a paid employee of the Association, whether Trustee, member of a council or Editor. It may be at times painful or pride-pricking for some to admit and explain that the House of Delegates establishes the policies of the Association and not individuals, even presidents, not the Board of Trustees and not any council or committee. And it is sound democratic doctrine.

Since regular sessions of the House of Delegates are held only annually in normal times, the suggestion is often heard that an additional and presumably a midwinter meeting of the House be held. As I see it, the chief advantage would be in timing. For example, the meetings of some state medical societies may be held just before, or just after, or even during the annual meeting of the House of Delegates of the American Medical Association. Under those conditions, any business proposed by a state medical society for action by the House of Delegates of the American Medical Association of necessity lies over for a year. I am inclined to think a midwinter session of the House would help relationship with the constituent associations and would perhaps permit previous publication of business and opportunity for more careful study.

There are occasions when the same policy recently reaffirmed seems to carry more weight than when quoted as adopted a year before. I myself am somewhat skeptical of any great actual and tangible advantages of two meetings a year; but I believe that relations with the constituent associations and with the public would probably be benefited.

While it has been my observation that the House of Delegates conducts all its necessary business in one annual meeting, there are certain facts that may have weight. The growth of the Association has been phenomenal. While the Constitution requires the Board of Trustees to meet only twice a year, at the time of the annual session and in February, the Board customarily meets in addition in September and November, and its executive committee meets nearly monthly. A mass of detail is finally in somewhat abbreviated form passed on to the House of Delegates for its information and action. One wonders if a divided dose might not be easier for the House of Delegates.

It may or may not be pertinent, because the analogy is not at all close, to remark that the legislatures of forty-four states now meet only once in two years, whereas not very long ago annual sessions of state legislatures were decidedly the rule. Of course, there are trends in all such matters and these trends change, sometimes like a pendulum.

With the rapid growth of the Association there has been a tremendous expansion of councils, standing committees and bureaus, all of which were duly authorized by the House of Delegates. All report to the House of Delegates, some directly and some indirectly through the Board of Trustees. In actual practice there seems very little difference.

The work of the various councils, standing committees and bureaus is generally of very high standard. The Council on Pharmacy and Chemistry and the Council on Medical Education and Hospitals have done very notable even if quiet service for the Association for years. It is perhaps invidious to single out these two councils, but they are taken as illustrations. At the present time some of the councils, committees and bureaus are grievously handicapped by the inability to secure competent personnel, owing to wartime conditions.

Despite the most strenuous efforts of the Secretary and General Manager, these problems are still acute. It is to be hoped that the cessation of hostilities will enable for example the reconstruction of the Bureau of Medical Economics. Then too it should shortly be possible to carry out the wishes of the House of Delegates in regard to field agents. This will help the relations with the constituent associations.

It is a source of profound regret that every Fellow of the Association is not familiar with the many and varied activities that go on at 535 North Dearborn Street, Chicago, the headquarters offices. And I refer to the activities there, not the building that houses the activities.

The publications of the Association need no word of praise from me, since they are admittedly the best in the given fields. All of us know some parts of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, admittedly the greatest medical journal in the world. If controversy is any indicator, a greater proportion of readers read the editorials in THE JOURNAL than the editorials of any newspaper that I know. But some readers are addicts of the section on abstracts, while others are addicts of Tonics and Sedatives. I hope most of us knew WAR, MEDICINE, which, having served a very valuable service, is passing off the scene. All of us should know the rehabilitated HYGEIA. The special journals seemingly meet a demand. The Directory and the QUARTERLY CUMULATIVE INDEX MEDICUS and some other publications are undertaken as a dutiful obligation to the profession.

The annual assembly is a great scientific event. As the Association has grown, some of the sections have become very large and apparently unwieldy. Some of the smaller sections have readily accommodated themselves to moderately increased audiences. The Council on Scientific Assembly has already made some interesting experiments, for example, with general meetings and panels. The Wartime Graduate Medical Meetings, carried out as a joint enterprise of the American Medical Association, the American College of Surgeons and the American College of Physicians, have done a tremendously

valuable service in meeting the needs of special conditions. This experience will doubtless be helpful to the Council on Scientific Assembly and may be translated into some modification of the meetings at the annual sessions. It must be remembered that large medical meetings are the fashion or the trend, if you will, of the day. Some of these meetings are now in a sense in competition with those of the American Medical Association.

At the moment the Scientific Exhibit is a conspicuous and popular feature of the annual sessions. This may be temporary or it may have suggestion for the sections, which often work in cooperation with the Scientific Exhibit.

With our changing world, one hears at times the query Does the Principles of Ethics, which the House of Delegates has adopted, apply satisfactorily to modern conditions in which economics is such an activating force? Medical practice today has many angles, many contacts, many relationships that did not previously exist. Moreover, there seems to be a relativity about ethics and virtues which make the Principles of Ethics difficult to define in exact terms. To be sure, while life generally certainly becomes more complex and complicated, honor and honesty do not fundamentally change. I have myself posed a few queries and problems to the Judicial Council in regard to certain procedures that seemed to me to involve medical ethics. I have argued somewhat strenuously at times, I fear. But the thoughtful thoroughness of the Judicial Council has convinced me that the code represents the general philosophy of medical ethics and that when and if revision is indicated the Judicial Council will present it to this House.

The American Medical Association belongs to the medical profession of the United States of America. It is a pleasure to report to all Fellows through the House of Delegates that it is my considered opinion that the House of the Association is in good order. I can certify that the funds of the Association are sedulously guarded, that expenditures are made carefully. Although the Association seems prosperous to the point of affluence, that I fear is more apparent than real. With the termination of the war and the resumption of normal programs which have an inevitable tendency to expand, the seeming prosperity may not be very real. In any event up to the present no money has been spent which the Association didn't have and no money has been spent just because the Association had it.

It is always amazing that so many Fellows of the Association give so freely of their time and energy to the Association. Most of them are the unsung privates in the infantry. But it is that loyalty and that devotion which makes the American Medical Association the great organization that it is today, and it is my belief that it will be even greater tomorrow.

(To be continued)

Washington Letter

(From a Special Correspondent)

Dec. 10, 1945.

Director of Veteran Hospital Planning

Major Gen. Paul R. Hawley, acting surgeon general of the Veterans Administration, announced the appointment of Lieut. Col. Harry E. Brown of Minneapolis to be acting director of the Hospital Planning and Operation Service of the Veterans Administration. Major responsibility will be the administering of the Veterans Administration's ninety-seven hospitals under the new plan of separating administration from medical service. He also will be in charge of planning new hospital sites, acquisition of army and navy hospitals declared surplus and enlargement of existing hospitals.

The Proposed Washington Medical Center

Expansion of Washington's privately owned hospital system through creation of a large hospital center in the national capital, with district hospitals donating one third of the expense, is being investigated further by the House District Committee and Senator Millard Tydings, Democrat of Maryland, Major General Fleming, Federal Works Administrator, Representative Sol Bloom, Democrat of New York, Dr. Hugh Cummings, director of Columbia Hospital, Charles A. Garrett and Samuel

H. Kaufman, members of the Emergency Hospital board, William R. Castle of the Garfield Hospital board and Dr. William A. Morgan and Rev. Charles Warner. Veterans officials reveal that a proposed new veterans' hospital for the capital will be built near Walter Reed Medical Center.

Influenza Cases Top Five Year Average

Incidence of influenza throughout the United States is higher than the average of the last five years, boosted by an unusually large number of cases in six states, Texas, South Carolina, Virginia, Colorado, Indiana and Utah. Brock C. Hampton of the United States Public Health Service explained that there were "no reports of any explosive outbreaks of epidemic proportion." The United States Public Health Service is watching with interest the effects of the Army's program to use a new vaccine on 7,000,000 men.

Official Notes

THE SCIENTIFIC EXHIBIT, SAN FRANCISCO SESSION

The Committee on Scientific Exhibit of the Board of Trustees has completed preliminary arrangements for the Scientific Exhibit to be held in connection with the San Francisco session, July 1 to 5, 1946. Prospective exhibitors should start making their plans as early as possible for the meeting.

Application blanks for space in the Scientific Exhibit may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago 10.

MENTAL HYGIENE TRANSCRIPTIONS READY DECEMBER 15

The Bureau of Health Education announces a new series of electrically transcribed radio health programs on the subject of mental hygiene entitled "Why Do You Worry?" available December 15.

This series of programs is in dramatized form. There are thirteen episodes each dealing with a common everyday adjustment to healthful living. Each program is summarized by a psychiatrist who was originally requested to furnish the basic material for the program and to check the script before it was recorded. The series was prepared under the general supervision of the Bureau of Health Education with the cooperation of Dr. Jules H. Masserman, Department of Psychiatry, University of Chicago, who acted as general consultant and also summarized two of the programs. Scripts were written by William J. Murphy and the dramatizations were produced by Norman Felton; Messrs. Murphy and Felton are respectively script writer and producer for the A. M. A.-N. B. C. network programs *Doctors Look Ahead* and the forthcoming series *Doctors at Home*. Music for the transcriptions is by Hammond organ, with Elwyn Owen the organist. Actors and sound effects and recordings are by the National Broadcasting Company; narration is by Dr. W. W. Bauer.

Following are the lists of program topics, titles and summarizing physicians:

1. Infant, *Bringing Up Baby*, Dr. C. Anderson Aldrich.
2. Preschool, *Toddlers Learn Fast*, Dr. George Mohr.
3. In School, *First Days of School*, Dr. Adrian Vander Veer.
4. Adolescence, *Threshold of Life*, Dr. Maxwell Gitelson.
5. Mental Health of the Adult, *The Road Ahead*, Dr. Franz Alexander.
6. Marriage Adjustment, *Early Adjustments in Marriage*, Dr. George Stevenson.
7. Finding a Job, *Finding the Right Job*, Dr. David Slight.
8. Job Adjustment, *The Job Ahead*, Dr. Burleigh Gardner.
9. Alcoholism, *Paying the Piper*, Dr. Kindwall.
10. Selecting a Life Partner, *Selecting a Life Partner*, Dr. E. W. Burgess.
11. Making Marriage Work, *Making Marriage Work*, Dr. Jules H. Masserman.
12. Depressions, *Trouble in Middle Life*, Dr. Francis Gerty.
13. People We Dislike, *People We Dislike*, Dr. Jules H. Masserman.

These transcriptions will be lent in the same manner as other transcribed material made available by the Bureau. Full information on request.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Von Urban Loses Reappointment as County Psychologist.—Dr. Rudolph Von Urban, "adviser on sexual problems" for forty-eight years, lost his job as psychologist of Monterey County in September, when members of the board of supervisors failed to reappoint him. Newspapers reported that members of the board declared that they were "frantic" from complaints by taxpayers who resent Von Urban's sex talks before service clubs. In 1944 Von Urban was acquitted of charges that he had practiced medicine without a license. He had been brought into court on a complaint of an investigator for the state board of medical examiners, the state contending that he had been trained as a physician in his native Vienna, had practiced medicine there for many years and therefore was acting as a doctor when he set out to advise Monterey County women. In his defense, Von Urban is said to have defined "sexology" as the "science of occurrence in the soul which teaches people to understand sex instincts" (THE JOURNAL, June 10, 1944, p. 439).

Research Study Club.—The fifteenth annual midwinter postgraduate clinical assembly in ophthalmology and otolaryngology will be conducted by the Research Study Club of Los Angeles, January 21-February 1. Special courses in applied anatomy and cadaver surgery of the head and neck will be conducted February 1-5. Guest speakers will include:

Dr. Oliver E. Van Alvea, Chicago, Clinical Aspects of Otolaryngology.
Dr. Meyer Wiener, St. Louis, Surgery of the Eye.
Dr. Frederiek C. Cordes, San Francisco, More Recent Advances in Ophthalmology.
Irving B. Lueck, B.S., Rochester, N. Y., Analysis of Various Optical Problems, with Special Reference to Lenses.
Dr. Herbert M. Evans, Berkeley, Calif., Recent Advances in Nutrition in Relation to Eye, Ear, Nose and Throat Problems and in Reference to Nicotinic Acid and Riboflavin Deficiencies in Man.
Dr. William J. Kerr, San Francisco, Care of the Common Cold.
Dr. Richard Waldapfel, Grand Junction, Colo., The Advancement of Otolaryngology.
Dr. Samuel Salinger, Chicago, Pathology of the Nasal Sinuses and Procedures for Facial and Nasal Reconstruction.
Dr. Samuel Fomon, New York, Plastic Surgery, with Special Emphasis on Physiology of the Nose.
Dr. Charles E. Kinney, Cleveland, Recent Advances in Surgery for the Hard of Hearing.
Vern O. Knudsen, Ph.D., Los Angeles, Studies in the Field of Hearing and Hearing Impairment.

The American Board of Ophthalmology will conduct an examination in Los Angeles January 28-February 1. The address of the research club is 635 South Westlake Avenue, Los Angeles 5.

DELAWARE

Society News.—The New Castle County Medical Society was addressed November 20 by Drs. Victor H. Vogel, Washington, on "Vocational Rehabilitation and the Medical Profession," and Robert F. Welty, Philadelphia, "Recent Advances in the Treatment of Intestinal Obstruction." Senator James M. Tunnell, Georgetown, addressed the society recently on "Wartime Health and Education and Its Significance in Peacetime Medical Care." Dr. William F. Rienhoff, associate professor of surgery, Johns Hopkins University School of Medicine, Baltimore, addressed the society October 16 on "The Present Status of the Surgical Treatment of Disease in the Thyroid Gland."

GEORGIA

New Gastrointestinal Clinic.—A state gastrointestinal clinic has been opened in the outpatient department of the University Hospital, University of Georgia School of Medicine, Augusta. The new unit will be a division of the cancer clinic of the University Hospital, designed primarily as a diagnostic gastrointestinal clinic with the main objective being the early diagnosis of cancer of the gastrointestinal tract. The clinic will be available to every one. Any one with gastrointestinal symptoms will receive an adequate examination without any fee. It has been noted that a very large percentage of the patients who arrive at the University Hospital with gastrointestinal disease are in a very advanced stage of the disease, many arriving too late for any hope of cure. Because one of the arguments of both patient and physician is that patients with comparatively minor complaints feel they cannot

afford the expense of a thorough examination, it is hoped that the new clinic will serve to bring this group to early attention. The *Journal of the Medical Association of Georgia* states that it is not generally known that from 25 to 30 per cent of all carcinomas are primarily in the stomach. The fact that probably only 5 to 8 per cent of these cancers are curable and that 38,000 people die of cancer of the stomach each year is largely due to a delay in diagnosis. The *Journal* states that until the public has been educated to the importance of seeking medical attention when they have had any gastrointestinal symptom, no matter how minor, for two weeks without any apparent cause, and until the medical profession as a whole feels that these patients are candidates for thorough examinations with the possible diagnosis of cancer considered, until proved otherwise, cancer of the gastrointestinal tract will continue to take a high toll of human life. Additional information concerning the new clinic may be obtained from the University of Georgia School of Medicine, Augusta.

ILLINOIS

Southern Illinois Election.—Dr. Charles D. Nobles, Anna, was elected president of the Southern Illinois Medical Association at its recent meeting in Mount Vernon. Other officers are Drs. Willis I. Lewis, Herrin, vice president and Thomas B. Williamson, Mount Vernon, secretary-treasurer. The next annual meeting of the association will be held in Anna.

Chicago

Personal.—Dr. Herman L. Kretschmer, Past President of the American Medical Association, was recently elected chairman of the board of editors of the *Journal of Urology*.—Dr. William H. Cassels has been promoted from associate professor of anesthesia to professor of anesthesia at the University of Illinois College of Medicine.

The McArthur Lecture.—The twenty-second Lewis Linn McArthur Lecture of the Frank Billings Foundation will be delivered at the Palmer House, February 22, by Dr. Armand J. Quick, professor and director of the department of biochemistry, Marquette University School of Medicine, Milwaukee. His subject will be "The Coagulation of the Blood: Theoretical and Practical Aspects."

Administrative Director of Hektoen Institute Named.—At the recent annual meeting of the board of trustees of the Hektoen Institute for Medical Research of the Cook County Hospital, Dr. Samuel J. Hoffman was appointed administrative director of the institute. Dr. Karl A. Meyer is president of the board. Dr. Steven O. Schwartz, hematologist for Cook County Hospital, was appointed hematologist to the Hektoen Institute.

LOUISIANA

Million for Tropical Medicine.—Tulane University of Louisiana School of Medicine, New Orleans, has received a bequest from Miss Sarah Henderson of \$1,075,000 for endowment of the chair of tropical medicine and for the improvement and changes in the department.

Appointments at Tulane.—William B. Wendel, Ph.D., associate professor of chemistry at the University of Tennessee College of Medicine and School of Biological Sciences, has been appointed professor and head of the department of biochemistry at Tulane University of Louisiana School of Medicine, New Orleans. Dr. Champ Lyons, formerly a member of the staff of Harvard Medical School and recently consultant to the secretary of war, Hemolytic Streptococcus Commission, has been appointed associate professor of surgery at Tulane.

MARYLAND

The Seton Institute.—Mount Hope Retreat, Baltimore, is undergoing a reorganization that includes a change in name and an extension of service for mental care. The name Mount Hope Retreat will be discontinued and henceforth the organization will be known as the Seton Institute. As part of the reorganization plan there is to be established an entirely new section in the institution as an "acute service." This section will be set up for the care and treatment of the milder emotional disorders. It will consist of four separate units of about 20 beds each, most of which are to be in private rooms, some with private baths. Each unit will be under the supervision of a competent psychiatrist with an adequate staff of graduate nurses, occupational therapists, physical therapists, recreational technicians and trained attendants. The plans of the Seton Institute include what is said to be unprecedented policy in the psychiatric field. An active staff is to be created similar to such staffs in general hospitals. Psychiatrists elected to

the active staff will have the privilege of admitting their private patients to the Seton Institute and to treat them personally according to the privileges and advantages now enjoyed by the general practitioner, the internist and the surgeon in the general hospital. It is the intent of the governing authorities and the medical advisory board to set up, as rapidly as possible, the professional and personnel standards of the entire institution so as to equal those of the highest psychiatric requirements. It plans to provide facilities for the training of psychiatric interns and for the three years of postgraduate service required of the specialists certified by the American Board of Psychiatry and Neurology. A medical advisory board consists of Dr. Wendell S. Muncie, Baltimore, chairman; Dr. Horace K. Richardson, Baltimore, secretary; Dr. Lewis B. Hill, Baltimore; Dr. Arthur J. Lomas, Lutherville; Dr. Ralph C. P. Truitt, Baltimore, and Dr. Esther L. Richards, Baltimore. A clinical director is to be appointed, and applications from candidates for this position are now invited. Applications may be forwarded to Dr. Richardson, secretary, 11 East Chase Street, Baltimore 2.

MICHIGAN

Seeks Oldest Physician in State.—The Michigan State Medical Society has recently issued a questionnaire to local secretaries in an effort to locate the oldest doctor of medicine in the state, whether a member of the society or not. The society plans a feature article on the oldest practitioner in a forthcoming issue of its state journal.

Personal.—Dr. Walter J. Cree, Detroit, who holds emeritus membership in the Michigan State Medical Society and the Detroit Academy of Medicine, was guest of honor at a luncheon held in conjunction with the Seniors Meeting of the Wayne County Medical Society, Detroit, October 17.—Dr. and Mrs. Holton M. Lowe, Battle Creek, celebrated their fiftieth wedding anniversary August 14.

Diagnostic Centers for Rheumatic Fever.—Nine diagnostic centers for rheumatic fever control are being organized in the cities of Ann Arbor, Bay City, Flint, Grand Rapids, Jackson, Kalamazoo, Lansing, Marquette and Traverse City under the auspices of the Michigan State Medical Society and the county medical society in whose area the project will be located. These are in addition to the cardiac centers maintained in Detroit. The work is to be limited to consultation and diagnostic service. No treatment will be permitted. No charge will be made to indigents for consultation service, the Michigan Crippled Children Commission assuming the cost of these fees. Private patients will be charged. All cases are to be reported to the Michigan Department of Health, and accurate records and follow-up reports are to be kept. All treatment services are to be given by the family practitioner.

NEBRASKA

New Director of Venereal Disease Control.—Dr. Walter B. Quisenberry, who recently completed a course at the Johns Hopkins School of Hygiene and Public Health, Baltimore, has been appointed director of the state division of venereal disease control, succeeding Dr. Reginald A. Frary, Lincoln, who resigned in November 1944 (*THE JOURNAL*, Dec. 23, 1944, p. 1095) to enter private practice in Monroe, Mich. Dr. Quisenberry graduated at the College of Medical Evangelists, Loma Linda-Los Angeles, in 1941.

Personal.—Dr. John R. Schenken, formerly professor and head of the department of pathology and bacteriology, Louisiana State University School of Medicine, New Orleans, has been appointed director of laboratories at the Nebraska Methodist Hospital, Omaha.—Rev. Emil G. Chinlund, for more than twenty-five years director of Immanuel Deaconess Institute, Omaha, has resigned but will remain in office for the remainder of the current year.—Dr. William E. Holmes, Omaha, has been named director of the Scotts Bluff County Health Department.

NEW YORK

Drive Against Antivivisectionists.—The Medical Society of the State of New York, at the recent meeting of its house of delegates, urged the appointment of a special committee to determine and formulate on a statewide basis an effective educational and defensive program to combat the growing antivivisection threat. The action was the result of a resolution introduced by the Medical Society of the County of Erie, which has a newly created committee for the defense of medical research. The resolution recommended that every county medical society in the state establish without delay a similar committee. It has pointed out that the preservation of animal

experimentation may well be maintained through the agency of a statewide network of county defense committees working in unison and efficiency under the guidance of an overall state society group.

Fellowships in Public Health.—The New York State Department of Health has available a limited number of fellowships for physicians returning from service who wish to equip themselves with the necessary field and academic experience for the practice of civilian public health on a full time basis. Six to twelve months of orientation and field work are provided under the guidance of experienced district state health officers, followed by an academic year at a postgraduate school of public health where the master's degree in public health is earned. Fellowship provisions are generous and include tuition. Those completing the training are professionally qualified for appointment on the staff of most local and state health departments. Additional information concerning necessary requirements may be obtained from the New York State Department of Health, Albany 1.

New York City

The Harvey Society Lecture.—George Wald, Ph.D., associate professor of biology, Harvard Medical School, Boston, will deliver the third Harvey Society Lecture of the current series at the New York Academy of Medicine on December 20. Dr. Wald will speak on "The Chemical Evolution of Vision."

Deaths from Carbon Monoxide.—More than six hundred accidents resulting from escaping gas containing carbon monoxide were reported to the New York State Department of Health in 1944. Of these, 314 terminated fatally. During the first nine months of 1945 preliminary totals show that 225 persons were killed by poisonous gases.

Faculty Changes at Long Island.—Dr. Phillips F. Greene, clinical professor of surgery, Long Island College of Medicine, has been appointed associate dean in charge of the administrative office of the college division at Kings County Hospital. Dr. Greene was formerly professor of surgery and dean of the Yale-in-China National Huang Ya Medical College in Changsha, China. Dr. Duncan W. Clark, Brooklyn, was also named associate dean, according to the *Bulletin* of the Long Island College of Medicine.

Friday Afternoon Lecture Series.—The twentieth series of Friday Afternoon Lectures of the New York Academy of Medicine, which began November 2 (*THE JOURNAL*, September 29, p. 371), continues as follows:

- Dr. Richard H. Freyberg, Current Views of Rheumatic Diseases and Their Management, January 4.
- Dr. Fordyce Barker St. John, Cancer of the Stomach—Surgical Aspects and Means for Early Diagnosis (the L. Duncan Bulkley Lecture), January 11.
- Capt. Arthur M. Master (MC), Apical Systolic Murmurs in Incipient Rheumatic Heart Disease, January 18.
- Dr. Samuel Silbert, Medical Treatment of Peripheral Vascular Disease, January 25.
- Dr. Williams Andrus, Present Concepts of Treatment of Burns, February 1.
- Dr. Solomon Fineman, Roentgenologic Aspects of Diseases of the Heart and Lungs of Importance to the General Practitioner, February 8.
- Dr. Henry E. Meleney, Diagnosis and Treatment of Malaria, February 15.
- Dr. Robert H. E. Elliott Jr., Disorders of the Spleen, with Special Reference to Those Amenable to Surgical Therapy, March 1.
- Dr. James William Hinton, The Indications for Surgery in the Treatment of Gastric and Duodenal Ulcers, March 8.
- Dr. Lawrence S. Kubie, Rehabilitation of the Psychiatric Convalescent, March 15.
- Dr. Henry L. Jaffe, Fibrous Dysplasia of Bone, March 22.
- Dr. Dana W. Atchley, Treatment of Neuroses by the Internist, March 29.
- Dr. Ephraim Shorr, Metabolic Aspects of Renal Stone Formation, April 5.

OHIO

Payment to Physicians for Furnishing Affidavits to Industrial Commission Rescinded.—When the Ohio Industrial Commission adopted a revised medical and surgical fee schedule, effective last May 1, it provided for a fee of \$3 for "affidavits furnished by physicians upon request of the commission containing information used as a basis for adjudication of the claim." This was done on recommendation of the Ohio State Medical Association (*THE JOURNAL*, June 23, p. 605). This provision was rescinded by action of the commission on October 15 and such revocation took effect on October 28. All fee bills for furnishing such affidavits at the request of the commission received and approved by the commission prior to the rescinding of that section of the fee schedule will be paid, but bills received after that date will be rejected. According to members of the commission, this action was necessary because of a combination of circumstances which left the commission without resources to meet

such payments. It had been anticipated that such fees would be paid out of the funds from which compensation and medical, hospital and nursing expenses are paid, namely the state insurance fund, consisting of premiums paid by employers. However, the attorney general on July 19 ruled that a fee for affidavits could not be legally charged against the insurance fund but must be considered a part of administrative expenses.

OKLAHOMA

Richard Graham Returns as Executive Secretary.—Richard H. Graham, who recently was relieved from military service, has resumed his activities as executive secretary of the Oklahoma State Medical Association.

Bert Caldwell Makes Hospital Surveys.—Dr. Bert W. Caldwell, Chicago, former executive secretary of the American Hospital Association, has been engaged to make a survey for the state board of health of the hospital facilities of Oklahoma.

PENNSYLVANIA

Personal.—Dr. William Ford, member of the medical staff at the Lewisburg Federal Penitentiary since 1938, has been appointed chief medical officer, to succeed Dr. Edward C. Rinck.

Philadelphia

Faculty Changes at Woman's Medical College.—Among recent changes in the faculty at Woman's Medical College of Pennsylvania are the following:

Dr. Margaret DeRonde, Norristown, Pa., to clinical associate professor in psychiatry.

Dr. Mary R. Curcio to clinical assistant professor of medicine.

Dr. Mildred C. J. Pfeiffer to clinical assistant professor of medicine.

Maria Wiener, Ph.D., to assistant professor of bacteriology.

Dr. F. Marin Williams to clinical assistant professor of gynecology.

Philip White Joins Research Institute.—Philip R. White, Ph.D., since 1938 associate in the department of animal plant pathology, Rockefeller Institute, Princeton, N. J., has resigned to become a member of the staff of the Institute for Cancer Research at Lankenau Hospital Research Institute, according to *Science*. Dr. White, who was to take up his new work December 1, will organize and direct a division of general physiology and tissue culture dealing with problems in tumor growth.

Bequest for Medical Care.—The University of Pennsylvania Hospital and Dr. John Diven, Philadelphia, are each bequeathed \$50,000 for free hospital care and medical attention to indigent persons in the will of Mrs. John Scanlin Scott, a widow, formerly of Philadelphia, who died recently in New Philadelphia, Ohio. Mrs. Scott wrote "I make the bequest to Dr. Diven so that he may carry out plans which he and I have discussed for the benefit of poor children who are in need of medical or other care and attention." The university's trustees are to administer the hospital's gift trust fund, the income of which will provide full maintenance of two beds every day in the year.

Personal.—Lieut. Col. Pascal F. Lucchesi, who for the past twenty-two months has been in Uruguay as chief of a health and sanitation mission for the Commission of Inter-American Affairs, has been released by the army and has resumed his duties as superintendent and medical director of the Philadelphia Hospital for Contagious Diseases.—William L. Hughes, Ph.D., professor of physical education, Teachers College, Columbia University, New York, and president of the American Association for Health, Physical Education and Recreation, has been appointed director of the health and physical education department of Temple University. Among other activities he has been a consultant for the postwar health and athletic facilities planning committee of the Philadelphia public schools.—Dr. Harvey Bartle, formerly medical director Pennsylvania Railroad System, has been named medical director at the Cramp Shipbuilding Company. He will succeed Dr. Kenneth A. Koerber, who resigned to become medical director at the Electric Storage Battery Company.—Dr. Mario A. Castallo, associate professor of obstetrics, Jefferson Medical College, on October 28 received an honorary degree of doctor of science from Holy Cross College, Worcester, Mass.—Dr. John A. Bertolet, treasurer of the Philadelphia County Medical Society, was elected coroner of Philadelphia County recently. Dr. Bertolet has been filling this office by appointment from the governor since the death of his predecessor, Dr. Herbert M. Goddard.

TENNESSEE

Personal.—Dr. Walter J. Johnson, Pulaski, has been appointed a member of the Tennessee State Board of Medical Examiners, succeeding Dr. James H. Keeling, Knoxville, who died September 1.—Dr. Marion G. Fisher, Jonesboro, has resigned as director of the Washington County-Johnson City health department to accept a similar position of the Lorraine County (Ohio) health department with headquarters in Oberlin, it is reported.

Cancer Clinic Open.—The Memphis Cancer Clinic was opened for patients October 1. It is under the direction of Dr. Douglas H. Sprunt, professor and head of the department of pathology, University of Tennessee College of Medicine, Memphis. It will be operated jointly by the Field Army, University of Tennessee, John Gaston Hospital and Shelby County Medical Society. Facilities will be at Gailor Clinic for diagnosis and recommendation for treatment.

Resolutions Honor Service to Medical School.—Resolutions paying tribute to Dr. Waller S. Leathers and Dr. Lucius E. Burch for their long service to the Vanderbilt University School of Medicine, Nashville, were adopted October 31 at the first fall meeting of the school faculty. Dr. Leathers, who retired in July, had been dean of the medical school and head of the department of preventive medicine and public health since 1928 (*THE JOURNAL*, June 23, p. 606). Dr. Burch, who also retired June 1 (*THE JOURNAL*, July 15, p. 820), graduated at Vanderbilt in 1896, joined the faculty in 1902 as professor of gynecology and was dean of the school from 1914 until 1925, when he resigned as dean to continue as head of the department of obstetrics and gynecology.

TEXAS

Hospital Receives Bequest for Pathologic Research.—The Hermann Hospital, Houston, will receive an income from Houston real estate valued at more than \$200,000 under a bequest by the late Dr. Oscar L. Norsworthy, first chief of staff at the hospital, who died Jan. 5, 1935. The fund will be used for pathologic research.

Seminar on Carcinogenesis.—Edmund V. Cowdry, Ph.D., professor of anatomy, Washington University School of Medicine, St. Louis, and director of research of the Barnard Free Skin and Cancer Hospital, will hold a special seminar on carcinogenesis at the Tumor Clinic of the University of Texas Medical Branch, Galveston, December 21.

Southwestern Medical Foundation Seeks Operating Fund.—The Southwestern Medical Foundation has opened a drive to secure \$1,300,000 for a five year operating fund. This fund is entirely separate from the building fund, for which \$1,000,000 was raised in 1943 to build a medical college in Dallas adjacent to the city-county hospital. An enlarged medical program in the city and county has necessitated the establishment of an operating fund. The medical college has not made demands on the city-county hospital which would increase the budget and has received no money from tax supported budgets. Instead, the school has contributed to the care of the sick by paying for the services of physicians who render service to indigent patients of Dallas County. Expense for this purpose amounts to \$50,000 a year, which is defrayed by the foundation. In addition it carries on research programs which are available to the city-county hospital.

WISCONSIN

Personal.—Dr. and Mrs. Ulysses S. Grant Keller, Madison, observed their fiftieth wedding anniversary September 10.—Dr. James J. Fitzgerald recently completed fifty years of service in Eagle.

District Society Honors William Middleton.—The Third Councilor District Medical Society devoted a recent meeting to honoring Lieut. Col. William S. Middleton, dean of the University of Wisconsin Medical School, Madison, who had just returned from military service. Dr. Middleton served as chief consultant in medicine for the European Theater of Operations, for which service he was awarded the Croix de guerre for "exceptional service during the liberation of France." Dr. Middleton spoke on his activities in Europe.

Annual Dearholt Day.—The sixth annual "Dearholt Day" was observed in Madison November 19 under the auspices of the Wisconsin Anti-Tuberculosis Association in collaboration with the University of Wisconsin Medical School, Madison, and the Dane County Medical Society. The speakers included Drs. Carl N. Neupert, Madison, assistant state health officer, Horton C. Hinshaw, Rochester, Minn., who discussed "Chemo-

therapy in Tuberculosis," and Leo G. Rigler, Minneapolis, "Emphysema and Atelectasis in the Diagnosis of Pulmonary Diseases." The observance honors the late Dr. Hoyt Dearholt, who is credited with founding the Wisconsin Anti-Tuberculosis Association. In Milwaukee, November 20, the observance was sponsored by the Marquette University School of Medicine, Milwaukee, and the Milwaukee Academy of Medicine. The same program was presented. The Wisconsin Trudeau Society cooperated in both events.

State Medical Election.—Dr. Charles A. Dawson, River Falls, was chosen president-elect of the Wisconsin State Medical Society at the annual meeting of the house of delegates of the Wisconsin State Medical Society in Milwaukee, October 20-21, and Dr. Patrick R. Minahan, Green Bay, was installed as president. Dr. William D. Stovall, Madison, is delegate to the American Medical Association. The 1946 annual meeting will be held in Milwaukee October 6-9. The society went on record as favoring a comprehensive surgical, obstetric and hospitalization insurance plan, which, it is estimated, will serve as full coverage for a major percentage of the workers and their families in Wisconsin. It is expected that the plan will be put into effect shortly after the first of the year. The plan will grant complete surgical coverage to employees, with dependents, having an income of less than \$2,600 a year and to single employees having an income of less than \$2,080 a year. For those having higher incomes the same benefits will apply, although the physicians do not guarantee that such payments constitute payment in full.

GENERAL

The March of Dimes.—January 14-31 has been designated as the annual March of Dimes of the National Foundation for Infantile Paralysis. Local chapters of the National Foundation have disbursed close to \$5,000,000 this year to cope with widespread epidemics that have claimed nearly 13,000 victims this year to date, making 1945 the fourth worst poliomyelitis period in the recorded history of the disease in this country.

Dr. Cumming Observes Anniversary with Sanitary Bureau.—On December 20 Dr. Hugh S. Cumming, formerly Surgeon General of the U. S. Public Health Service, will complete his twenty-fifth year as director of the Pan American Sanitary Bureau. Dr. Cumming, when he retired as surgeon general in 1936, had completed sixteen years in this position and forty-two years as a member of the U. S. Public Health Service. On his retirement from the service, Dr. Cumming devoted his full time to the directorship of the Pan American Sanitary Bureau. To mark his twenty-fifth anniversary, the republic of Guatemala has just granted him a gold medal.

Reprints for the Devastated Medical Libraries of Manila.—In connection with its campaign to help rebuild the medical libraries of Manila which were destroyed during the Japanese occupation, the Academy-International of Medicine requests that medical authors contribute eight or ten reprints of each of their articles which have been published since 1941. They may be sent at the regular parcel post rate of 16 cents for the first pound and 11 cents for each additional pound, in care of Dr. Agerico B. M. Sison, Philippine General Hospital, Manila, P. I. Dr. Nathan S. Davis, Chicago, is president of the Academy-International of Medicine and Dentistry, which has offices in Suite 101, Liberty Building, Topeka, Kan.

Prepayment Medical Care Organizations.—The Federal Security Agency has just made available as Bureau Memorandum number 55 the third edition of its work entitled "Prepayment Medical Care Organizations." The pamphlet may be secured from the United States Government Printing Office at 25 cents a copy. It contains a complete survey of all prepayment medical care organizations which made information available to the Social Security Board up to March and April 1945. A statistical summary provides information concerning each state, the type of plan, the number of persons eligible for service, the number of physicians and nurses associated with the plan and the types of service provided.

Warning of Forger.—William B. Pierce was wanted by the police for larceny, fraudulent conversion and forgery at the Philadelphia General Hospital. According to a warrant issued by the police department, Pierce is said to have qualifications to fill almost any position in a hospital. He is a good artist and can operate cardiographic equipment with ease. He is a former convict, having served time for the charges of forgery and larceny of government property, and at present is

a parole violator. Since he is known to have worked in large hospitals in major cities, staff members and employers of hospitals are asked to be on the lookout for him. Should he make his appearance, persons are requested to notify the local police department, post office inspectors or the F. B. I.

Nutrition Grants.—New grants of \$120,565 were announced by the Nutrition Foundation at a meeting of the board of trustees at the Waldorf Astoria, New York, November 8. The new grants bring the total for fundamental research for science of nutrition made by the foundation up to \$1,041,755. Included among the new grants are the following:

Stanford University received \$5,000 for a two year study of the distribution of body protein under changing conditions.

Yale University received \$5,000 for a two year study of the chromatographic adsorption analysis of fatty acids and carbohydrates.

The University of Wisconsin received \$10,500 for a three year study of the effect of dietary components on the requirement of amino acids.

The University of Toronto received \$8,000 for a two year study of the relation of carbohydrates to inositols.

Tulane University received \$4,250 to study nutritional anemia in man.

The University of California received \$2,400 for a two year study of the metabolism of amino acids in the chick.

Pennsylvania State College received \$10,000 for a two year study of spectrographic methods of estimating vitamin A and provitamin A.

Cornell University received \$7,000 for a two year study of the function of essential nutrients.

Duke University received \$4,000 for a two year study of fatty livers and choline deficiency in the guinea pig.

Northwestern University received \$12,000 for a two year study of the human requirements of niacin and related nutrients.

Growth Committee Has Central Office.—The Committee on Growth, recently formed within the Division of Medical Sciences of the National Research Council as a result of action by the American Cancer Society, has established a central office in the Washington headquarters of the council where information on all phases of cancer research will be assembled and from which reports may be distributed to interested investigators. The Committee on Growth wishes to call the attention of interested investigators to the following major principles by which it will be guided as far as possible in its sponsorship of research and training programs:

Desirability of long-term grants to projects of major importance.

Grants, where possible, of such magnitude as to permit individual investigators to appoint associates for long-term training periods.

Granting of fellowships to institutions for training of workers to acquire new techniques and wider experience.

Maintenance of continuing individual contact with workers in the field.

Provision, on a participating basis, for continuing economic security for professional workers.

Liberal attitude toward the investigator's work, his publication and reports.

Formation of the committee on growth and its officers were reported in THE JOURNAL, June 23, page 607. The Committee on Growth may be reached through the Division of Medical Sciences, National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

Production of Penicillin.—Although production of penicillin dropped in September, production in October increased, members of the Penicillin Producers Industry Advisory Committee reported to the War Production Board October 31. Actual production of penicillin in the third quarter (in billions of units) was 688.98 in July, 636.51 in August and 586.37 in September. Estimated production in the fourth quarter is 61.47 in October, 657.96 in November and 698.10 in December. The decreased production in September resulted from the poor quality of corn steep liquor received by the penicillin producers. The poor quality was caused by the fact that the only corn available was of an inferior grade. Although the industry has made provision for further purification of the corn steep liquor at the plant, the War Production Board is taking steps to arrange for the production of a higher grade of corn steep liquor. WPB officials suggested that expert controls on penicillin should be restored to enable records to be kept of the quantities of penicillin leaving the country. The department of commerce and members of the committee concurred in this suggestion. So that hospital requirements for penicillin in all forms may be met in full, WPB officials and the committee agreed that an order or directive should be issued giving hospitals first call on penicillin production.

CORRECTION

Frederick Eugene Porter Not Dead.—THE JOURNAL, December 1, page 978, inadvertently reported the death of Capt. Frederick Eugene Porter (MC), U. S. Navy (ret.). The report of death was confused with that of a person having a similar name but who is not licensed to practice in California. Dr. Porter is commanding the U. S. Naval Special Hospital, Santa Cruz.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 10, 1945.

The Coordinating of Research on Rheumatic Fever and Heart Disease

The annual Harveian Oration, founded by Harvey in 1656, was delivered at the Royal College of Physicians by Dr. John Parkinson, cardiologist, who spoke on rheumatic heart disease. Rheumatic fever in childhood is the main source of heart disease up to the age of 40. The damage occurs between the ages of 5 and 15 years and exceeds tuberculosis as a cause of death up to the age of 20. It is estimated that almost one tenth of all rejections for war service were due to heart disease. The economic loss can be judged by the fact that the duration of economic activity of affected men is no more than ten years on an average. It is agreed that poverty and overcrowding are basic causes; rheumatic fever is rare in the children of the well-to-do. There is almost unanimous opinion that compulsory notification of rheumatic fever is essential to progress, for it permits early diagnosis before heart disease has occurred. The excellent scheme now in operation by the London County Council is regarded in the United States and elsewhere as the most comprehensive in existence. But institutional treatment from the outset and subsequent supervision have to be extended to every case of rheumatic fever. There should be created a rheumatic fever committee to coordinate research and plan for the future. Dr. Parkinson believes that the Royal College of Physicians is prepared to assume leadership in this organization. The objective should include one main county hospital for research and hospitals and clinics to serve all densely populated areas. Ultimately it will be found necessary, as it has been in the United States, to create a national council for rheumatic fever and heart disease.

"Acroparesthesia" of the Hands

Dr. F. M. R. Walshe, a neurologist, has shown that the "acroparesthesia" of the hands and arms in women, which is generally diagnosed as "neuritis," has a simple mechanical explanation (*Brit. M. J.* 2:596 [Nov. 3] 1945). During the war he has seen an unusual number of such cases. The largest group consists of middle aged or elderly women normally unaccustomed to full house work but obliged to undertake it during the war. The other group consists of younger women who, in addition to their house work, have done part time work in industry or have had the burden of child care. There was a gradual onset of intense numbness and tingling in the hands and fingers, which was greatest on waking in the morning, when the fingers were clumsy and weak. By the time the patient had dressed, the symptoms had diminished but the fingers remained uncomfortable and less nimble than normal. At the end of the day the symptoms increased again. During the night burning pain and paresthesia in the fingers might awaken the patient. In other cases night brought relief. Treatment which consisted of the administration of vitamins or physical therapy was not satisfactory.

On physical examination these patients showed general indications of chronic fatigue. The musculature was atonic and often the shoulder girdles were remarkably low. Muscular wasting was not present, but also always there was tenderness of the extensor muscles in the forearm and sometimes of the thenar and adductor muscles of the thumb. Objective sensory loss was exceptional; there might be some dulling of sensibility of the fingers. Occasionally there was cyanosis or pallor of the fingers.

This condition is a rib pressure syndrome but is not due to a rudimentary seventh cervical or first thoracic rib but to a normal first rib. Atony of the muscles leads to lowering of the shoulder girdle with traction and compression of the lower trunk of the brachial plexus, which may be caught as in a vise. Whereas the pressure syndromes due to a rudimentary cervical or first thoracic rib are usually unilateral because the thoracic outlet is commonly asymmetrical, the normal first rib syndromes are bilateral because the thoracic outlet is symmetrical and the sagging of the shoulder girdles—dependent on general loss of muscular tone—is also bilateral. If the symptoms are more apparent on one side, it is usually the right, because the right hand is more heavily used than the left. Rest in bed or simple cessation of mechanical work gives immediate relief. This view of the etiology of acroparesthesia is not new and has been presented by other writers in the past, notably by Wartenberg (1936, 1944). It has been overlooked by clinicians, and failure to understand the cause of the paresthesia leads to futile treatment. However, the connection of the paresthesia with fatiguing work of women during the war appears to be quite new.

BELGIUM

(From a Special Correspondent)

Nov. 3, 1945.

Therapy of Arteritis of the Lower Extremities

In the discussion on endarteritis obliterans before the Belgian Society of Physical Therapy Williams pointed out that spasm is an important factor. The therapy of the condition has three objects: to counteract infection, to establish a sufficient collateral circulation and to remove or attenuate pain. The physical therapeutic methods employed are irradiation and diathermy, which are especially indicated in spasm. However, diathermy may aggravate the pain. Infra-red rays, light baths and dry warm air are especially effective in endarteritis obliterans. The collateral circulation can be favorably influenced by an apparatus which exerts rhythmic pressure variations on the involved member. Pressures between 20 and 80 mm. of mercury are exerted, depending on the nature of the case. This procedure leads to permanent dilatation of the collateral arterioles and it aids in the reestablishment of the normal circulation of the skin. In cases of permanent spasm it is advisable to combine this method with lumbar sympathectomy.

The Medullary Route in Metallic Osteosynthesis

At a meeting of the Belgian Society of Surgery, Soeur presented Kuntscher's technic of nailing by the intramedullary route. He demonstrated the instruments employed and showed twelve old fractures of the extremities that had been treated between 1943 and 1945. There were four fractures of the bones of the forearm, two of the humerus, three of the tibia and three of the femur; all were diaphysal. Soeur stressed the simplicity of the technic and the excellent results. The essential points of the method are good reduction, perfect maintenance and early mobilization. The nails are removed three to six months after their introduction.

Reunion of English, French and Belgian Surgeons

At a meeting of the Association of Surgeons of Great Britain and Ireland several Belgian surgeons extended to our French and British friends an invitation to renew associations after the cruel years of separation caused by the German occupation of the major part of Europe. This reunion took place in Liège on July 6 at the Hôpital de Bavière in the services of Professors Albert and Orban and on July 7 in the new surgical unit of the Hôpital d'Etterbeek, where Professor Leriche performed a resection of the lumbar sympathetic nerves.

Technic of Secondary Partial Gastrectomy

Deloyers and Govaerts reported before the Surgical Society of Belgium results obtained in 27 cases of secondary partial gastrectomy. In greatly debilitated patients it is advantageous to perform the operation in two stages; the gastrectomy is not done until three months after the first stage, which involves restoring the continuity of the jejunum by end to end anastomosis. In 19 cases the secondary partial gastrectomy was accomplished in one stage; 4 of these patients died of the usual postoperative complications. The mortality rate is much like that of von Haberer (15 per cent).

Deloyers and Govaerts advocate the extensive removal of the old stoma, gastric as well as jejunal, and insist that the new jejunal stoma be placed below the sutures of the old excision. The technic employed is the Reichel-Polya type; it gives entirely satisfactory results, because it effects excellent emptying but completely eliminates the secretory area of the stomach.

GERMANY

The following medical news has been obtained through the Department of Commerce, Washington, D. C.—EDITOR.

University of Freiburg Department of Pathology

Prof. Franz Büchner, the director of the department of pathology of the University of Freiburg, was visited on May 27 at his home, Holbeinstrasse 32, Freiburg im Breisgau. He gave an account of the work of his department in considerable detail. The work he had done during the war was really an extension of his interests on the effects of oxygen deficiency on the heart muscle. In 1939 he had published a book on coronary insufficiency, *Die Koronarinsuffizienz* (Dresden and Leipzig, Theodor Steinkopf). He observed that severe suffocation, carbon monoxide poisoning, severe anemia and exposure to low levels of oxygen pressure were followed by a punctate necrosis in the cardiac muscle and that this was accompanied by a deformation of the ST complex of the electrocardiogram. He extended these experiments and showed that guinea pigs exposed to low oxygen pressure which finally proved fatal showed varying degrees of ganglion cell necrosis in the central nervous system, especially the medulla oblongata. In 1942 Altman and Schubothé in an article entitled "Funktionelle und organische Schädigungen des Zentralnervensystems der Katze im Unterdruckexperiment" (*Beitr. z. path. Anat. u. z. allg. Path.* 107:1, 1942) showed that in cats the areas of the brain which were sensitive to oxygen lack, as shown by microscopic examination, were those areas which showed electroencephalographic changes under the same conditions.

Professor Büchner also remarked that in advanced cases of blood loss similar microscopic changes were found post mortem. In reply to a question as to whether Periston had been used to any considerable extent in cases of severe hemorrhage, he said that as a result of his experiments Professor Lang, the head of the Physiologisch-Chemisches Institut der Militärärztlichen Akademie in Berlin had recommended the use of serum and apparently had also organized this. Another subject which interested his department was the effect of chilling and low temperature in relation to the body glycogen. Prolonged exposure to cold causes the disappearance of the cardiac glycogen. The effects of cold and other noxious agents on the lipid content of the adrenals have also been investigated. The lipid content of the adrenal is most sensitive to attack. A considerable amount of work on infectious hepatitis has likewise been done and a manuscript by Kühn, one of his assistants, is awaiting publication. The manuscript appears to be well illustrated. Although it was not possible to go through it in any detail, mention is made here of its existence in case it may be of interest. Büchner mentioned that he had come across a very rare sequela to infectious hepatitis, namely cirrhosis.

ORGANIZATION OF THE LABORATORY

Professor Büchner stated that most of his staff had already been with him before the war, but a pathologic section was formed in his laboratory by the Air Ministry, and by this means he was able to keep his staff together during the war. Thus, he had four assistants for the Air Ministry section of his work and only one so-called civilian assistant. The work carried on under the auspices of the Air Ministry was mainly a continuation of his general type of research. The following list of his present staff was obtained: Dozent Dr. G. Liebegott; Dr. G. Veitly (army pathologist in Italy); Dr. H. W. Altmann, Dr. H. A. Kühn and Dozent Dr. G. Peters, located in St. Blassien since the laboratory was destroyed, and D. J. Pidrotka (Brannenburg on Inn).

CHEMICAL SECTION

After the raid of Nov. 27, 1944 a part of the laboratory which was under the direction of Dr. H. J. Staudinger (in Freiburg) was left, but the chemical section was completely destroyed. Nevertheless it had been possible to rescue most of the books and apparatus from the cellars, where they had been put for safety.

During the interrogation, Professor Büchner stated that Prof. Dr. S. Janssen, professor of pharmacology, Freiburg, Sonnenhalde 14, had continued his work on the various fractions of the pituitary but had had few assistants during the war and had done no pharmacologic work for the German government.

Hygiene Institute, University of Tübingen

Prof. Otto Stickl is the director of the Hygienisches Institut of the University of Tübingen. This institute is concerned with academic teaching and research and does the routine bacteriologic testing for the Württemberg area. As many as seventy to eighty thousand tests are performed annually. The institute appeared to be well equipped, but Professor Stickl reported that some ten days previously the French authorities had removed his electron microscope, some photographic apparatus and his experimental protocols. Other apparatus, including an ultracentrifuge, still remained. Professor Stickl's main interests have been the sulfonamides, epidemic hepatitis and dibromosalicyl. He had been examining in mice the effects of the sulfonamides on intestinal and dysentery organisms, particularly with regard to the distribution of the drugs in the various body fluids, and the nature of their action on the bacteria. No outstanding results were reported. It was interesting that while he had examined Globucid, Pyrimal, Albucid and sulfapyridine, he had not examined sulfanilylguanidine or Marfanil. He considered that Globucid and Pyrimal were about equally effective (no work on penicillin had been done).

Professor Stickl had investigated a number of cases of epidemic hepatitis, which had come mainly from the eastern front, especially from Stalingrad, in 1942. In reply to a question, he stated that he had no experience with hepatitis occurring after injection of serum. Detailed protocols were not in Professor Stickl's possession.

A sample of 3:3'-dibromosalicyl had been supplied to Professor Stickl by Prof. R. Kuhn of Heidelberg. The toxicity and chemotherapeutic activity of this substance against a fatal staphylococcal infection in mice had been investigated by one of Stickl's students (H. Cienger) in a doctor's dissertation. Whereas Kuhn claimed that 50 mg. daily, either by mouth or intraperitoneally, was tolerated by a 20 Gm. rat, Cienger found that a 20 Gm. mouse died almost immediately after administration of 5 mg. by intraperitoneal injection. Lower doses occasionally lengthened or saved the life of an infected mouse, but dibromosalicyl was less effective than Globucid. In the mouse it was three times as toxic as Globucid. Professor Stickl saw no future in this compound for staphylococcal infections. The

compound used in these tests was not dibromosalicil alone but the boric acid complex made for purposes of solubilization.

Professor Stickl's department has done no work on tetrachlorosalicil.

Biologic-Chemical Research Laboratory

The Biologisch-Chemisches Forschungslaboratorium, F. E. Freitag, director, is in two buildings in the village of Freudental, near Konstanz. It is a private institution with funds derived from several sources, namely (a) royalties on Freitag patents, (b) grants from the firm of Lomberg G.m.G.H., the holding company of Bykopharm, Frankfurt-on-main and (c) private contributions. The amount spent in 1944 was between 70,000 and 80,000 marks. Freitag had five qualified assistants and in addition about a dozen laboratory assistants. His present work is in the field of biologic chemistry. He claims to have evolved a purely physical, in vitro method for the measurement of anti-coagulant activity, using the gelling of a synthetic sol as an indicator. In attempts to find a satisfactory anticoagulant he examined the sulfuric acid esters of cellulose, chitin, denatured collagen and a carbohydrate fraction from *Chondrus crispus* (Iceland moss). No completely satisfactory substance has been found. He studied under Jorpes in Stockholm for three weeks in March 1944 and at present, with Dr. Frank of Neustadt in the Black Forest, he is trying to evaluate heparin in the prevention of thrombosis.

State Hygiene Institute

The State Hygiene Institute was badly damaged. Prof. K. Kisskalt, the director, explained the method that had been started in an attempt to avoid using agar with Petri dish cultures. Use was made of the sheets of filter paper soaked in bouillon stained with fuchsin, covered with a disk of cellophane and then sterilized. This method was used in the examination of fecal samples. Work had also been started with *Penicillium notatum* but had not got very far. They had a considerable number of cultures giving varying yields and had worked with a company named Mack in Illertissen.

MEXICO

(From Our Regular Correspondent)

Oct. 29, 1945.

Quackery, Tuberculosis and Newspapers

Recently some of the leading newspapers in Mexico City have given extensive publicity to two notorious nostrums for the treatment of tuberculosis. Mucelydina, the first one, is a supposed sodium salt of an acid which, it is said, is obtained from cultures of a fungus of the family of Mucedinaceae. The other so-called specific is called Diasone. It consists of plain ozone, which is applied to pleural cavities and it is claimed that with such a treatment all bacilli are almost instantly killed in a consumptive patient. In both cases the inventors are an engineer or a chemist without any knowledge of medicine, supported by a physician with unknown scientific background and sponsored by a newspaperman in charge of the propaganda. Up to the present time the authors have not revealed either the species of the fungus used to prepare Mucelydina or the chemical composition and method of preparation of the product and have not presented any evidence or data concerning experiments made in the laboratory; nor have scientific data on the preparation and the method of action of Diasone been revealed.

At the beginning Drs. Donato G. Alarcón, Ismael Cossio Villegas and Miguel Jiménez, well known specialists on tuberculosis, with the cooperation of the National Tuberculosis Association and some laboratory workers, made a study of the nostrums and reported that the experiments made in vitro, in animals and even in 30 patients were absolutely negative. The two alleged specifics did not change the status of the tuberculous

lesions either in laboratory animals or in human patients, and did not reduce either the number of bacilli in the sputum or have any influence on the temperature, the blood picture or the weight of the patients. On the contrary, it was found that Mucelydina caused congestion of the lesions in the lungs and hemoptysis. Similar studies made in the "Sanatorio Esperanza" in Havana, Cuba, confirmed these findings and Dr. Francisco Nuñez Llanes, director of the institution, stated in his report that ". . . we were unable to observe even the slight improvement obtained with the regular treatment of the ailment. . . ."

Second Mexican Congress on Social Sciences

On October 12 President Manuel Avila Camacho presided over the inauguration session of the second Mexican Congress on Social Sciences, organized by the Mexican Geographic and Statistical Society of Mexico (Sociedad Mexicana de Geografía y Estadística), which is one of the oldest on the continent. On the organizing committee were Señores J. Jesus Silva Herzog, undersecretary of public finances, Gilberto Loyo, economist and statistician, and Agustín Aragón, engineer, who acted as vice presidents, and Señores Jorge L. Tamayo, engineer, and Francisco de A. Benavides, lawyer, acting as secretaries.

The congress was organized in round table discussions and sessions of the different sections. Important and interesting sections were the ones on Sociology, Education, Social Medicine, Statistics, Anthropology and the round table discussions on "Human War Problems," "Natural Resources of Mexico," "Problems of Population," "Postwar Social Problems" and "Social Medicine," which were attended by large audiences.

Course on Tropical Dermatology

As announced in THE JOURNAL, a short course on tropical dermatology for North American physicians, which was organized at the special request of Dr. Howard Fox, New York, and Leon Goldman, Cincinnati, was conducted by the Dermatology Society of Mexico and the National Faculty of Medicine, with the cooperation of the Secretariat of Public Health and Welfare. The topics considered were Tropical Characteristics of Dermatology in Mexico, by Dr. Jesus González Urueña, Pinto Disease, by Dr. Salvador González Herrejón, Onchocerciasis, by Dr. Manuel Martínez Baez, Syphilis, by Dr. Julio Bejarano, Leprosy, by Dr. Eugenio Latapí, Mycosis, by Dr. Antonio González Ochoa, Leishmaniasis, by Dr. Jorge Millán Gutiérrez, and Lymphogranuloma venereum, by Dr. Oswaldo S. Arias. For each subject a syllabus was prepared and each lecture was followed by clinics or demonstration in the laboratory. The course lasted two weeks and was attended by fifty physicians, most of them North Americans, who also visited the special wards for dermatology patients in the city hospitals, the Institute of Health and Tropical Diseases, the School of Public Health and Hygiene, the National Leprosarium in Zoquepam, Mexico, the Lepers Clinic and the state of Guerrero, where the pinto disease prevails in certain zones. A certificate was given all students who attended the sessions regularly.

Marriages

FRANKLIN HENRY ELLIS JR., Princeton, N. J., to Lieut. Elizabeth Dunston Watson of Great Neck, L. I., November 17.

WILLIAM TOWNSEND DAVISON, Durham, N. C., to Miss Mildred McCarthy of Fairhaven, Mass., November 14.

EDWARD B. BENEDICT to Dr. Patricia Hatfield Smith, both of Boston, in Old Greenwich, Conn., October 2.

ROBERT HUGH DION, Glendive, Mont., to Miss Mary Kathleen Cleckley of North Augusta, S. C., June 24.

OLIN A. DIVELY, Blandinsville, Ill., to Mrs. Mary Kathryn James of Macomb in October.

Deaths

Benjamin Warren Black * Oakland, Calif.; Medico-Chirurgical College of Philadelphia, 1916; fellow of the American College of Hospital Administrators, of which he had been vice president, American College of Physicians and the American Psychiatric Association; member of the American Association for the Advancement of Science, Association of Military Surgeons of the United States, California Academy of Medicine and the American Hospital Association, of which he had been president and trustee; served as regimental surgeon with rank of major with 157th Infantry during World War I; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty; held a commission in the reserve corps of the U. S. Public Health Service from 1920 to 1924; executive officer of the U. S. Veterans Bureau from 1924 to 1926 and medical director from 1926 to 1928; administrator of the Alameda County hospitals; died December 1, aged 58, of nephritis.

Raymond Edward Watkins * Portland, Ore.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; professor and head of the department of obstetrics and gynecology at the University of Oregon Medical School; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member of the Pacific Coast Society of Obstetrics and Gynecology, of which he had served as president, Portland Academy of Medicine, the American Gynecological Society, International College of Surgeons and the Pacific Coast Surgical Association; past president of the Portland Society of Obstetrics and Gynecology; served during World War I; on the editorial board of the *Western Journal of Surgery, Obstetrics and Gynecology*; chief of the gynecologic and obstetric service at the Multnomah County Hospital; on the attending staff of the Emmanuel Hospital, where he died August 7, aged 63, of septicemia.

Hugh Carter Henry * Richmond, Va.; Medical College of Virginia, Richmond, 1896; specialist certified by the American Board of Psychiatry and Neurology, Inc.; commissioner of the state department of mental hygiene and hospitals, a newly created position provided in the state government reorganization act, effective July 1, 1942; formerly assistant physician at the Central State Hospital in Petersburg, where he had been superintendent for many years; served as director of state hospitals since July 1, 1938, when the post was created; member of the Virginia Neuropsychiatric Society, of which he served as president, Southern Psychiatric Association, American Psychiatric Association and the Tri-State Medical Association; died October 14, aged 69, of carcinoma of the mediastinum.

Roger C. Swint * Atlanta, Ga.; University of Georgia Medical Department, Augusta, 1898; an Affiliate Fellow of the American Medical Association; past president of the Baldwin County Medical Society and the Tenth District Medical Society; member of the American Psychiatric Association, serving as a member of the council; formerly assistant physician and clinical director of the Milledgeville (Ga.) State Hospital, where he had been superintendent from 1923 to 1935, when he resigned; as a token of the respect the hospital and community held for him, the principal road leading to the hospital grounds is known as Swint Avenue; consulting psychiatrist at the Veterans Administration Facility; died August 8, aged 69, of coronary occlusion.

Albert Dalbey Frost * Columbus, Ohio; University of Pittsburgh School of Medicine, 1919; professor and since 1929 head of the department of ophthalmology at the Ohio State University College of Medicine; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Oto-Laryngology, American Ophthalmological Society and the Association for Research in Ophthalmology, Inc.; on the staffs of the University, Children's, Grant, Mount Carmel and White Cross hospitals; served as president of the Ohio Commission for the Blind; died near Monterey, Va., November 15, aged 56, of injuries received in an automobile accident.

Francis Fenwick Young * Covington, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1884; member of the Sixth District Medical Society, Southern Medical Society, Louisiana Hospital Association, American Hospital Association and the National Association of Private Psychiatric Hospitals; first vice president and member of the board of directors of the Commercial Bank and Trust Company of Covington; founder, director and psychiatrist in chief of the Fenwick Sanitarium, first located in Abbeville and from 1912 in Covington; died September 26, aged 82, of cardiovascular renal disease and undulant fever.

James T. M. Allan * Los Angeles; University of Southern California College of Medicine, Los Angeles, 1903; on the staff of the California Hospital, where he died August 25, aged 75, of subacute bacterial endocarditis.

Nim Lou Barker, Broken Bow, Okla.; University of Arkansas School of Medicine, Little Rock, 1915; member of the American Medical Association; served during World War I; medical examiner for the Selective Service; died August 19, aged 60, of coronary occlusion.

Edward Hooker Baxter, Boston; University of Vermont College of Medicine, Burlington, 1882; member of the American Medical Association; died July 30, aged 93, of coronary sclerosis.

Nicholas William Bonelli, Baltimore; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1928; member of the American Medical Association; served as police surgeon; died in the West Baltimore General Hospital August 14, aged 43, of meningococemia.

William Celsor, Hartsville, Tenn.; Eclectic Medical Institute, Cincinnati, 1884; died August 25, aged 85.

Ira D. Clark, Fargo, N. D.; Chicago Homeopathic Medical College, 1895; served on the staff of the Grafton (N. D.) State School; formerly member of the school board; died July 23, aged 76, of coronary heart disease.

Jeremiah Joseph Donohue, Worcester, Mass.; College of Physicians and Surgeons, Baltimore, 1907; formerly city physician; served one term as a member of the school committee; died in Princeton August 4, aged 72, of chronic diffuse myocarditis.

Shepherd Drain, Baltimore; Maryland Medical College, Baltimore, 1906; Southern Homeopathic Medical College, Baltimore, 1907; member of the American Medical Association; died August 6, aged 68, of carcinoma of the bowel.

Mortimer Sharpe Faulkner, East Orange, N. J.; University of Oklahoma School of Medicine, Oklahoma City, 1942; served an internship, a residency and was a member of the staff of the Orange Memorial Hospital in Orange, where he died August 8, aged 31, of angioblastoma.

Lewis Michael Fox, Asheboro, N. C. (licensed in North Carolina in 1885); died in the Barnes-Griffin Clinic August 21, aged 86, of pneumonia.

Albrecht Eugene Fuld * Port Washington, N. Y.; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, Germany, 1932; specialist certified by the American Board of Radiology, Inc.; interned at the Auburn City Hospital in Auburn; served a residency at the Montefiore Hospital for Chronic Diseases in New York and the Methodist Hospital in Brooklyn; died July 3, aged 37.

John W. Groff * Philadelphia; Jefferson Medical College of Philadelphia, 1888; past president of the Montgomery County Medical Society; died August 6, aged 81, of cerebral arteriosclerosis.

Nelson Kingsley Hopkins * Arlington, S. D.; Northwestern University Medical School, Chicago, 1907; served as president of the South Dakota State Medical Association, of which he had been an honorary member; died July 25, aged 63.

Jackson Cleveland Loveless, Grayson, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1913; member of the American Medical Association; died in Atlanta August 4, aged 55.

Horatio Devol Luse, Cuernavaca, Morelos, Mexico; the Hahnemann Medical College and Hospital, Chicago, 1911; formerly affiliated with the U. S. Public Health Service Reserve and various Veterans Administration facilities; died July 22, aged 71.

Francis Henry McCaffrey, Providence, R. I.; St. Louis University School of Medicine, 1940; member of the American Medical Association; diplomate of the National Board of Medical Examiners; served a residency in anesthesia at the Lahey Clinic in Boston; on the staffs of the Homeopathic and Charles V. Chapin hospitals; on the staff of St. Joseph's Hospital, where he had interned and where he died July 21, aged 32.

Ernest Otis McCleary, Ordway, Colo.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1909; served as county coroner, city health officer and county physician; died in the Mennonite Hospital and Sanitarium, La Junta, August 18, aged 60, of acute myocarditis.

James B. McWilliams, Ada, Ohio; University of Louisville (Ky.) Medical Department, 1884; died July 24, aged 84, of cerebral hemorrhage.

David McDill Morrison, Denver; College of Physicians and Surgeons, Chicago, 1884; died July 17, aged 91.

William Henry Musgrove @ Wheeling, Mo.; *Marion-Sims College of Medicine*, St. Louis, 1899; died in Eversonville August 22, aged 74, of cerebral thrombosis.

Ernst Valentine Neumann @ Los Angeles; *John A. Creighton Medical College*, Omaha, 1913; on the staffs of the *Queen of Angels*, *Cedars of Lebanon* and the *Presbyterian Hospital-Olmsted Memorial*, where he died August 14, aged 65, of pulmonary embolism.

Charles Henry Patterson, Fargo, N. D.; *Minneapolis College of Physicians and Surgeons*, the medical department of *Hamline University*, 1908; affiliated with the *Veterans Administration Facility*, where he died August 8, aged 60, of coronary arteriosclerosis.

Edward Herman Pond, Pittsburgh; *University of Michigan Homeopathic School*, Ann Arbor, 1886; died in the *Shady-side Hospital* July 7, aged 83, of nephrosclerosis and rheumatoid arthritis.

Luke William Price, Graham, Texas; *Memphis (Tenn.) Hospital Medical College*, 1894; past president of the *Young-Jack-Archer Counties Medical Society*; served as city and county health officer; worked with the *Selective Service Board of Young County* during World War II; on the staff of the *Graham Hospital*; died July 28, aged 71, of arteriosclerosis.

Mabel E. Rouse, Spring House, Pa.; *College of Medicine and Surgery (Physio-Medical)*, Chicago, 1902; died August 31, aged 67, of coronary occlusion.

Hester Beck Searle, Denver; *University of Colorado School of Medicine*, Denver, 1930; member of the *American Medical Association*; interned at the *George Washington University Hospital* in Washington, D. C.; served on the teaching staffs of the *Denver General* and the *Presbyterian hospitals* in Denver; died in the *Bellevue Hospital*, New York, August 5, aged 38, of acute toxic hepatitis.

Robert Sidney Sloan, Columbus, Ohio; *Ohio State University College of Medicine*, Columbus, 1921; served as assistant physician at the *Ohio Penitentiary*; died in the *Mount Carmel Hospital* August 30, aged 49, of diabetes mellitus and nephrosclerosis.

Joseph Allen Smith @ Minot, N. D.; *George Washington University School of Medicine*, Washington, D. C., 1907; on the staff of the *Trinity Hospital*; died August 13, aged 61, of coronary thrombosis.

B. C. H. Spencer, Rochester, Mich.; *Michigan College of Medicine*, Detroit, 1881; formerly mayor of the village and member of the board of education; died August 25, aged 85, of cerebral thrombosis.

Joseph McArthur Spinks, Oak Hill, W. Va.; *College of Physicians and Surgeons*, Baltimore, 1912; died in the *Massachusetts General Hospital*, Boston, August 17, aged 58, of epidermoid carcinoma of the esophagus.

Millard F. Stever, Thompsonville, Mich. (licensed in Michigan in 1900); died August 7, aged 88, of heart disease.



LIEUT. COL. DWIGHT MEYER DETER
M. C., A. U. S., 1903-1944



CAPT. JOHN WISTER HAINES
M. C., A. U. S., 1912-1944



MAJOR JAY EUGENE TREMAINE
M. C., A. U. S., 1902-1944

Helen Jean Baird Schneider, Detroit; *University of California Medical School*, San Francisco, 1943; interned at the *University of California Hospital* in San Francisco; resident at the *Henry Ford Hospital*; died August 23, in Strathly, District of Nipissing, Ont., Canada, aged 28, from drowning.

Clarke Enoch Stewart, Vincennes, Ind.; *Kentucky School of Medicine*, Louisville, 1897; member of the *American Medical Association*; served during World War I; on the staff of the *Good Samaritan Hospital*, where he died August 8, aged 69, of injuries received in an automobile accident last Christmas eve.

KILLED IN ACTION

Dwight Meyer Deter, Austin, Texas; *Baylor University College of Medicine*, Dallas, 1929; served as resident physician at the *North Louisiana Sanitarium* in Shreveport; entered the medical reserve corps of the U. S. Army as a first lieutenant on July 16, 1929; began active duty as a captain on Dec. 1, 1939; promoted to major and lieutenant colonel; died in *South China Sea* Oct. 24, 1944, aged 41, while on board a Japanese prison ship which was sunk.

John Wister Haines, Philadelphia; *State University of Iowa College of Medicine*, Iowa City, 1937; interned and served a residency at the *University Hospitals* in Cleveland; served a residency at the *City Hospital* in Cleveland; entered the medical reserve corps of the U. S. Army

as a first lieutenant on June 7, 1937; began active duty in the same grade on Nov. 23, 1940; promoted to captain; died in the *South China Sea* Oct. 24, 1944, aged 32, while on board a Japanese prison ship which was sunk.

Jay Eugene Tremaine, Palos Verdes Estates, Calif.; *Rush Medical College*, Chicago, 1930; interned and served as resident physician at *St. Luke's Hospital* in Chicago; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army on April 3, 1941; later promoted to captain and major in the medical corps, Army of the United States; awarded the *Bronze Star* posthumously; died in *Mindanao*, P. I., Sept. 7, 1944, aged 41, while on board a Japanese prison ship which was sunk.

Ira Farwell Thompson ☉ Donnellson, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1902; member of the American Medical Association; died in Mount Pleasant August 1, aged 71, of thrombosis of the cerebral artery.

Albert R. Touvelle, Firth, Neb.; Medical College of Ohio, Cincinnati, 1882; died in Lincoln August 21, aged 88, of hypostatic pneumonia.

Friend Wilford Trader ☉ Columbiana, Ohio; University of Pittsburgh School of Medicine, 1923; president of the school board; on the staff of the Salem City Hospital, Salem; medical examiner for the Equitable Life Insurance Company; died August 30, aged 47, of coronary occlusion.

James Wilson Wallace ☉ Aledo, Ill.; Northwestern University Medical School, Chicago, 1906; died in the Moline (Ill.) Public Hospital August 26, aged 64, of a skull fracture received in a fall.

Joseph H. Wallis, Rice Lake, Wis.; Milwaukee Medical College, 1898; served as mayor of Rice Lake, Wis.; for many years connected with the Trinity Hospital in Milwaukee; at one time a captain in the medical corps of the state and the national guard; died in a hospital at St. Paul July 23, aged 71, of heart disease and bronchopneumonia.

John Thomas Ward, Providence, R. I.; Harvard Medical School, Boston, 1900; visiting physician at the St. Joseph's Hospital; died in the Lovell General Hospital, Fort Devens, Mass., July 21, aged 71, of coronary thrombosis.

Hospital; courtesy surgeon, Flower and Fifth Avenue Hospitals; died in the Le Roy Sanitarium August 17, aged 69.

Elizabeth Fahnstock Lewis Whitaker, Anaheim, Calif.; New York Medical College and Hospital for Women, Homeopathic, New York, 1891; died in the Newhall Community Hospital, Newhall, July 30, aged 76.

William Preston White ☉ Henderson, Texas; Jefferson Medical College of Philadelphia, 1886; past president and secretary of the Rusk County Medical Society; president of the First National Bank and the Federal Savings and Loan Association; died July 3, aged 81, of heart disease.

Henry Charles Whiting, Fairfield, Iowa; Chicago Medical College, 1888; formerly a medical missionary in Korea; died August 18, aged 80, of mesenteric thrombosis.

Richard Edward Wilder, Whitefield, N. H.; Bellevue Hospital Medical College, New York, 1894; member of the American Medical Association; councilor and past president of the Coos County Medical Society; for many years medical referee for Coos County; member of the draft board during World War I; served several terms on the local school committee; on the staff of the Morrison Hospital, where he died August 24, aged 75.

Ernest Everett Wilson, Berkeley, Calif.; College of Physicians and Surgeons of San Francisco, 1906; served in France during World War I; died recently, aged 62.

Charles Luther Wood, Lakewood, Ohio; University of Wooster Medical Department, Cleveland, 1898; a member of



CAPT. DONALD L. WHITEHOUSE
M. C., A. U. S., 1915-1945



MAJOR ALBERT NOEL TOUSIGNANT
M. C., A. U. S., 1900-1944



CAPT. JOHN ROBERT PEPIN
M. C., A. U. S., 1916-1944

James Watt ☉ New York; Long Island College Hospital, Brooklyn, 1900; fellow of the American College of Surgeons; medical director for the New York offices of the Union Carbide & Carbon Corporation and the General Foods Corporation; served in France during World War I; surgeon to the Midtown

the staff of the Lakewood Hospital, where he died July 19, aged 74.

John G. Wynns, Sturgis, Ky.; Hospital College of Medicine, Louisville, 1903; also a dentist; served as a member of the school board; died August 18, aged 68, of heart disease.

KILLED IN ACTION

Donald Lynwood Whitehouse, Wakefield, Mass.; Tufts College Medical School, Boston, 1941; diplomate of the National Board of Medical Examiners; interned at the Lawrence General Hospital in Lawrence, Mass.; began active duty as a first lieutenant in the medical corps, Army of the United States, on July 1, 1942; promoted to captain; awarded a presidential citation and the Purple Heart; killed in action on Luzon, P. I., February 13, aged 29.

Albert Noel Tousignant, Oconto, Wis.; Marquette University School of Medicine, Milwaukee, 1925; member of the American Medical Association; interned at the Marquette University Hospital in Milwaukee; for four years held the position of medical director of the Civil Conservation Corps camps in Wisconsin and upper Michigan; entered the medical reserve corps of the U. S. Army

as a first lieutenant on Jan. 28, 1925; began active duty as a captain on March 17, 1941; stationed in the Philippines as chief surgeon of the Sternberg Hospital, Manila; after the fall of Bataan and Corregidor, was listed as missing; promoted to major in the medical corps, Army of the United States; died in the South China Sea Oct. 24, 1944, aged 43, while on board a Japanese prison ship which was sunk.

John Robert Pepin, Escanaba, Mich.; University of Michigan School of Medicine, Ann Arbor, 1941; interned at the Columbia Hospital in Milwaukee; began active duty as a first lieutenant in the medical corps, Army of the United States, on Oct. 12, 1942; promoted to captain on July 20, 1943; killed in action in the European area Aug. 9, 1944, aged 27.

Correspondence

"WHY TRADENAMES FOR ANTIBIOTICS?"

To the Editor:—I wish to compliment you on the editorial comment "Why Tradenames for Antibiotics?" (*THE JOURNAL*, October 20). This could readily apply to many other phases of the pharmaceutical practices. We are obliged to phone the druggist taking the proper name of many preparations before prescribing. The rank and file of physicians, as I discover, are disgusted with this practice, and I believe we would gladly specify any firm that might put out its products under the name that would indicate the real composition and use. I doubt if we really fall for the trick of trade names by different houses. I for one would select a firm in which I have confidence and prescribe accordingly.

CHARLES A. COFFIN, M.D., Kewanee, Ill.

To the Editor:—May I take the liberty to say that your short editorial comment is but too justified. The trade names for the various barbituric acids and the vitamins are already a heavy burden to the memory of the physicians. Yesterday it cost me quite a time to find out which firm manufactures cevitic acid and whether the name was cevitic or cevitanic acid. There is no grammatical reason for one or the other way to write it. As I did not want to ask a drug store, I was compelled to look over quite a number of periodicals; finally I found out that it is manufactured by Abbott and is spelled cevitic acid (for ascorbic acid). It would be much simpler and easier in case physicians could prescribe Ascorbic Acid, Squibb, or Ascorbic Acid, Abbott, or whatever other product they would prefer. In the same way it would be much easier to prescribe Barbituric Acid, Roche (called Allonal), or Barbituric Acid, Abbott (instead of Nembutal), and so forth.

ROBERT KUHN, M.D., Athens, Ga.

Resident Physician, St. Mary's Hospital.

CREEPING ERUPTION

To the Editor:—We wish to add the feature of remote skin response to the allergic picture of cutaneous helminthiasis (larva migrans, or creeping eruption) recently delineated in *THE JOURNAL* (Wright, D. O., and Gold, E. M.: Loeffler's Syndrome Associated with Creeping Eruption [Cutaneous Helminthiasis], *THE JOURNAL*, August 11, p. 1082).

On September 20 one of us (H. A. A.) noted a triple infestation of the sole of his right foot manifested by typical serpentine burrows of larva migrans. At the same time he became aware of pruritic skin lesions which successively but meagerly invaded various parts of his torso before appearing profusely on the inner aspect of each thigh about twenty-four hours later. The eruption consisted of discrete, dull erythematous plaques measuring about a centimeter in diameter. The itch was mild. As each lesion receded, its surface became somewhat crinkled. An occasional plaque then seemed to contain a superficial pinhead of clear fluid, which absorbed readily. None ruptured. All remote skin manifestations disappeared gradually during the next two and a half weeks and were gone a day or two before it was decided that the last of the culprit dog hookworm larvae had ceased its peregrinations and had apparently given up the ghost.

Laboratory studies were not feasible, owing to the stand-by status of this station.

We consider this rash to have been an allergic cutaneous manifestation of *Ancylostoma braziliense* infection.

HENRY A. ARKLESS, Captain, M. C., A. U. S.

JOSEPH H. HOLMES, Captain, M. C., A. U. S.

LUDWIG ASCHOFF

To the Editor:—A nephew of mine who is a lieutenant in the United States Army saw in a book shop in Italy a book by Aschoff published in 1940 in Nazi Germany. The title of the book is "Rudolf Virchow: Wissenschaft und Weltgeltung," published by Hoffmann und Campe, Hamburg. In the beginning chapters of this book Aschoff writes in a way that enabled the book to pass the censorship. He states that he will deal only with the scientist Virchow, not with the politician, with whose views he disagrees. In later chapters, however, which generally are not read by a censor, Aschoff deals freely with Virchow's liberalism. I have known Aschoff personally and I have heard him talk in political meetings and have always considered him liberal. When I last visited him (around 1930) I was impressed by his liberal views and by his interest in American ideas and institutions.

The book "Rudolf Virchow: Wissenschaft und Weltgeltung" (Hamburg, Hoffmann und Campe, 1940, 95 pages) by Ludwig Aschoff is a curiosity in the history of medicine and of bibliography. Brought out in 1940, during World War II, by the publishing house that once printed Heinrich Heine's poems, it forms part of a series called "Spiritual Europe" (naturally under Nazi censorship). The keynote of the series is Franco-German understanding in science, philosophy, music and art. The aim and the failure of the undertaking do not concern us. Pathologists, however, are interested in a book on Virchow, the master pathologist and great liberal, written by Aschoff, a great pathologist about whose political attitude opinions have differed during his lifetime as well as afterward.

The reader will be surprised by an array of quotations from Virchow's variegated writings. These, put together, form a neat little anti-Nazi catechism, which becomes even more concise and impressive by the use of italics:

"My patriotism . . . is not this dead love that arrogantly looks down on other people. . . ."

"By recognizing and honoring each other we shall become accustomed to fight with logic, not with weapons. . . ."

"Reconciliation . . . instead of hatred. . . ."

"The idea of a true and really all embracing humanity. . . ."

"Liberty to the largest extent. . . ."

"Science is human by nature, its form only is national" (reviewer's translation).

Aschoff does not even shrink from the taboo of race in writing about Virchow's anthropologic work, including the Jewish question; in this he cleverly camouflages himself by reporting a harmless controversy between Virchow and a Jewish writer. Through much of the book Aschoff lets Virchow have the floor and leaves the reader to form his own opinion and to guess that of the writer, as for instance in the ticklish question of naturopathy, which was looked on with favor by the Nazi government. On occasion Aschoff must have chuckled while thinking of the censor: he gives a list of famous Germans who have written letters to Virchow, and the one letter he prints verbatim came from the author of Germany's most popular farmer stories. Aschoff knew that this man had been a Jew and he could safely assume that the censor did not.

The book is intended for lay people as well. Readers who are not familiar with the intricacies of medical and philosophic thinking between 1800 and 1850 may be misled by quotations and statements about Virchow's vitalistic ideas. These, however, are stimulating to the medical scientist when he considers the similarity between 1850 and today, namely the accumulation of many facts and the longing for synthesis. Virchow fulfilled this longing.

The book has a place in the history of pathology for Aschoff's sake as well as for Virchow's.

ALFRED PEARL, M.D., New York.

TREATMENT OF AGRANULOCYTOSIS

To the Editor:—The report on the need of penicillin in thiouracil induced agranulocytosis by Drs. H. H. Rothendler and M. G. Vorhaus in the November 10 issue of *THE JOURNAL* raises the question of the proper treatment of agranulocytosis.

A review of the literature shows the occurrence of agranulocytosis in 31 of 1,985 persons, who received thiouracil; 10 patients died. Agranulocytosis may occur at any period in the course of thiouracil treatment even when small maintenance doses are employed. Unfortunately it may occur suddenly and even one week after the withdrawal of the drug therapy as it does following the use of sulfonamides and oxophenarsine hydrochloride (mapharsen). Several of the cases listed, such as the one of Rothendler and Vorhaus, have signs and symptoms of angina with elevated temperature, yet the blood picture shows only a severe granulocytopenia. I have had agranulocytosis occur in 2 of 35 patients who were treated with thiouracil. Both recovered.

In the treatment of agranulocytosis the drug should be immediately stopped; if the patient is warned he can do so himself. Penicillin should be given prophylactically as well as therapeutically for infection in adequate dosage. Maintenance of nutrition is urged. It is important to avoid too much handling of the patient and to segregate him from people with colds or other infections. Therapeutic endeavors, particularly sternal punctures, are contraindicated. In 1 case in the literature a sternal abscess was found post mortem. Iodine should be given to the patient who has had thyrotoxicosis in order to sustain the improvement of the thyroid state and prevent the possibility of a thyroid crisis. I gave my patients, empirically, crude liver extract. I do not expect too much from pentnucleotide, bone marrow concentrate, pyridoxine or folic acid as a cure for agranulocytosis. Transfusions are useful only in supplying nutriment to the body. The white blood cells are not increased following transfusions alone. They are too dangerous to use, since transfusion reactions have contributed to the death of several patients. Agranulocytosis may persist for seven to eight days. After this period one is usually rewarded by the slow recovery of the patient if an infection is not penicillin resistant.

BERNARD SELIGMAN, M.D., Brooklyn.

HEAT DISEASE

To the Editor:—The article "Statistical Study of 265 Cases of Heat Disease" by Borden, Wadill and Grier (*THE JOURNAL*, August 25, p. 1200) was read with considerable interest. To those of us stationed in the southern part of Iran, where some of the highest known environmental temperatures have been recorded, the problem of heat disease has been of considerable importance. During this last summer we have encountered dry bulb shade temperatures up to 122 F. and humidity as high as 61 per cent.

The general principles of treatment as outlined in the article are sound. In the management of heat stroke, however, there is, in my opinion, a considerable misdirection of emphasis. Much attention is devoted to the "rapid restoration of circulating fluid volume"; the urgency of rapidly reducing the hyperthermia is inadequately stressed.

True heat stroke results from a breakdown of the central temperature regulating mechanism. In this condition I have encountered rectal temperatures of over 110 F. It is well known that irreparable brain damage can result from severe hyperthermia if it is permitted to persist for any length of time. I have seen 2 patients with heat stroke who were left with serious residual neuropsychiatric sequelae: 1 manifested definite mental impairment and the second was left with a hemiplegia

and motor aphasia. The primary consideration is rapid lowering of the body temperature to a safe level of about 102 F. The use of a water spray with electric fans, as described by the authors, is adequate for this purpose. After the temperature is lowered, these patients must be carefully watched, since the hyperthermia may recur.

The process of brain damage in severe heat stroke is rapid and every minute counts. Consequently I cannot agree when the authors state that "intermediary treatment in the hospital or field is discouraged." Medical aid men readily learn the danger of severe hyperthermia and the necessity of immediate treatment. Treatment directed toward lowering the body temperature can and should be started whenever the patient is found. It is often dangerous to transport these patients for some distance to a hospital during the heat of the day. Every dispensary in this area is equipped with a heat stroke room so that immediate treatment can be instituted.

In our cases of heat stroke, circulatory collapse has not been a significant factor. The pulse is full and bounding and the blood pressure maintained. The use of plasma would appear to serve no purpose. It is true that these patients have lost considerable body salt, and a slow intravenous drip of isotonic solution of sodium chloride appears to be of some value. The dangers of pulmonary edema must be considered.

While heat exhaustion and heat stroke often merge, it is extremely important to distinguish clearly the cases of severe hyperthermia. These are the patients in whom death or serious sequelae can be avoided by immediate treatment.

HERMAN R. NAYER, Captain, M. C., A. U. S.

USE OF SALICYLATES IN RHEUMATIC FEVER—MIXTURE OF ASPIRIN AND VITAMIN K UNWARRANTED

To the Editor:—Since Link and his associates demonstrated a hypoprothrombinemic effect of salicylates in rats using 12.5 per cent plasma, the clinical significance in man of this finding has been in question. Despite the fact that unequivocal reports of actual hemorrhagic complications developing during salicylate therapy are rare, *THE JOURNAL* saw fit to call attention to the potential dangers in an editorial (Hazards in the Salicylate Treatment of Rheumatic Fever, Feb. 24, 1945, p. 460).

A great opportunity to throw light on this question has arisen with the large number of rheumatic fever cases seen in the armed forces which have been treated with large doses of salicylates, reports of which are now appearing. With doses as large as 10 to 15 Gm. daily continued over long periods, salicylate levels as high as 30 to 60 mg. per hundred cubic centimeters have commonly been attained with some increase in prothrombin time but with no evidence of hemorrhage. Lieutenant Butt and his associates (*THE JOURNAL*, August 25, p. 1195) have recently reported their experience with treatment of 51 cases of rheumatic fever with salicylates in the Navy. They found slight elevation of prothrombin time but no evidence of hemorrhage.

Based on our experience at this hospital, Lieutenant Colonel Warren reported a series of 98 cases of rheumatic fever (Central Society for Clinical Research, Chicago, November 2) treated with 10 to 20 Gm. of salicylates daily with no evidence of hemorrhage. Major Coombs reported (American Federation for Clinical Research, Chicago, November 1) that rheumatic fever patients receiving 10 or more grams of salicylate show an increase in prothrombin time only up to 20 seconds (normal 14 seconds). This is not a dangerous disturbance, according to Quick. Coombs further pointed out that doses of 6 Gm. or less per day cause no disturbance of the prothrombin time.

Two recently printed items make this more than an academic problem and stimulated this communication. One was the pub-

lishing in *THE JOURNAL*, October 20, of an abstract of an uncritical article on the subject by Capt. Rudolf Singer (*Arch. Otolaryng.* 42:19 [July] 1945) which might be accepted for more than it is worth by readers not acquainted with the subject. Singer stated in essence that since post-tonsillectomy hemorrhages are more common in this country than in Europe, and aspirin is given more commonly postoperatively in this country than in Europe, the explanation must be the administration of salicylates. The flaws of such reasoning should be obvious to all.

The second was an announcement in the *Madison Wisconsin State Journal* of October 8 that a patent had been assigned to the Wisconsin Alumni Research Foundation for a combination of aspirin and synthetic vitamin K, which presumably would be put on the market for public exploitation on the basis that such a combination would be superior to plain aspirin.

It is my belief that the present evidence shows that while salicylates do cause a slight prolongation of the prothrombin time, this is not clinically significant in doses up to 150 grains (10 Gm.) daily and hence the routine addition of vitamin K to aspirin is unwarranted.

CHARLES S. HIGLEY, Lieutenant Colonel, M. C., A. U. S.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Libel: Letter by Attending Physician to Successor Regarding Treatment Given Patient Not Libelous.—The plaintiff operated a "beauty parlor" in Fort Worth, Tarrant County, Texas. Being required by a Texas statute to obtain a "health certificate" to continue in business, she submitted to an examination by the physician defendant in Fort Worth. He advised her that she was "diseased" and administered "three shots of bismuth and three shots of Neo" within the next three weeks. These injections "caused first an itching sensation and later pain and suffering." After the sixth injection her suffering became so intense that she refused further treatment and closed her business in Fort Worth. She then returned to her former home in Greenville, Hunt County, Texas. Her suffering increased in intensity. Her hands and feet became swollen, her skin peeled off and she was confined to her room for several months, all the result, so she claimed, of "an overdose of arsenic administered by the physician." Before leaving Fort Worth the patient had informed the physician of her plans and he advised her that the injections must be continued. In response to her inquiry as to what the injections were, he told her that he would write her physician in Greenville concerning his treatment and, acting apparently in response to his patient's request, he wrote the following letter to his patient:

September 25, 1942. . . . My dear Miss—: We are giving you the following information so that you may pass it on to your doctor. We have given you, since September 1, three shots of bismuth and three shots of Neo. Very truly yours, ————M.D.

The patient kept this letter in her possession until Oct. 26, 1942, when she handed it to her physician in Greenville. Apparently, though this fact is not made clear from the reported case, to justify at all the litigation that ensued, there must have been some variance in the diagnoses of the two physicians.

Subsequently the patient sued the physician defendant in Hunt County, alleging, as grounds for recovery of damages, (1) that the letter quoted was a libel in that its effect was to charge that she was suffering from and had been treated for a contagious or infectious disease and (2) that the physician had been grossly negligent in his diagnosis and treatment. The physician defended by pleading privilege, in effect, that the suit against him should have been instituted in Tarrant County, in which Fort Worth was located. The patient filed a controverting affidavit, alleging (1) that the libelous letter was published

in Hunt County, where she resided at the time of the accrual of the cause of action and (2) that in treating her the defendant committed a continuing trespass, having its inception in Tarrant County and its completion in Hunt County, in which she suffered her major injuries. The trial court overruled the physician's plea of privilege and he appealed to the court of civil appeals of Texas, which certified certain questions of law to the Supreme Court of Texas for determination.

Two of the certified questions of law were as follows:

Second. Was delivery by appellee [patient] to Dr. Kennedy [the Greenville physician] of the letter given her by the appellant for the purpose and under the circumstances mentioned, appellee knowing at the time its meaning and purpose, a publication by her of the alleged defamatory matter?

Third. Under the facts heretofore stated, did appellee's alleged cause of action for libel against the appellant, if a cause of action existed, accrue in Hunt County?

The effect of the filing by the physician of the plea of privilege, said the Supreme Court, and the controverting affidavit filed by the patient was to impose on the patient the burden of proving that a cause of action for libel in fact accrued in her favor. There is no libel unless there is a publication, for the gist of an action for libel is injury to the plaintiff's reputation. Under the facts, the controlling question, so far as the right of the patient to sue in Hunt County is concerned, is: Was there a publication by the patient of a libel? That the patient requested the physician to write a letter to be shown her Greenville physician and that she herself, after placing herself under the treatment of her physician in Greenville, showed him the letter is clear. Her claim for damages for libel is on the theory that the letter was defamatory, meaning by necessary implication and understood by any physician to mean that she was unchaste and had a loathsome disease, and that the physician defendant had been treating her. The letter was written in response to her request so that her Greenville physician would know what treatment had been given. The patient, however, was free to make use of the letter or not to use it as she saw fit. There is no suggestion that the physician defendant misled her as to the meaning of the contents of the letter. We express no opinion as to questions other than that of publication and, in our opinion, if the publication of which the plaintiff complains was consented to, authorized, invited or procured by the plaintiff, she cannot recover for injuries sustained by reason of the publication. Therefore the answer to these two certified questions of law is as follows: The delivery of the letter by the patient to her Greenville physician for the purposes and under the circumstances shown in this case was the publication of the libelous matter, if any, by the patient, and not by the physician, and a cause of action for libel did not accrue in favor of the patient.

The final question of law certified to the Supreme Court was as follows:

Was the trespass complained of, that is, the alleged negligent diagnosis and treatment of appellee by the appellant causing her suffering and damages in both Tarrant and Hunt counties, a continuing trespass authorizing suit in either county within the meaning of subdivision 9, Article 1995? [Revised Civil Statutes, Texas, 1925.]

The section referred to in that question reads as follows:

A suit based upon a crime, offense or trespass may be brought in the county where such crime, offense or trespass was committed, or in the county where the defendant has his domicile.

The patient, said the Supreme Court, relying for venue in Hunt County on the provision of the statute just quoted, had the burden of pleading and proving that a trespass was in fact committed in Hunt County. As shown by the facts, however, all the treatments, the injection of drugs which were alleged to have caused injury to the patient, were administered by the physician in Tarrant County. The injuries from the treatments were first suffered in Tarrant County and after the patient had left that county and returned to Hunt County her suffering from the treatments in Tarrant County continued and increased in intensity. The patient contended that the physician, by the injection of drugs in her veins in Tarrant County, set in motion an agency which he knew would inflict physical injury many days in the future, that the agency thus set in motion inflicted serious injury on her in Hunt County, and that thus the physician by the agency adopted did commit a trespass in Hunt

County. In our opinion, answered the court, this claim confuses injury caused by the trespass with the trespass itself. The misfeasance or the wrongful act is the trespass. Trespass is defined in 2 Bouvier's Law Dictionary, Rawle's Third Revision, page 3316, as:

An unlawful act committed with violence, actual or implied, causing injury to the person, property, or relative rights of another.

Frequently the word "injury" is used in its secondary meaning as having reference to an act which damages, harms or hurts, but ordinarily and primarily the word means the damage or hurt done to or suffered by a person or thing. 21 Words and Phrases, Permanent Edition, pages 414-443. While it is true that an action for compensatory damages may not be maintained unless the trespass has caused injury, the trespass is the misfeasance or wrongful act, and the injury is the result of the trespass rather than a part of it. The statute under consideration uses the words "in the county where such crime, offense or trespass was committed." The physician's acts of which the patient complains were committed in Tarrant County. The resulting injuries were in part suffered in Hunt County. Previous decisions of this court support the conclusion that the wrongdoer's act is the gist of the trespass and hold that the word trespass as used in the statute under consideration here embraces only wrongful acts, wilfully or negligently committed, and not to mere omissions to do what should have been done. Furthermore, decisions of the court of criminal appeals of Texas as to the venue for prosecution of the crime of abortion are in point. The general venue statute which is applicable to that offense provides that the proper county for the prosecution of the offense is that "in which the offense was committed." Article 211, Code of Criminal Procedure. It has been held that if the means or medicine which procures the abortion is used or administered in one county and the abortion occurs in another county, venue lies in the first county. These decisions hold that, although the final consummation of the offense occurred in the second county, the sole cause of it was set in motion in the first county and that because the defendant put in operation a force in one county, which produced its results in another county, the accused is responsible in the forum in which he performed the acts which resulted in the abortion. *Moore v. State*, 37 Texas Cr. R. 552, 40 S. W. 287; *Humphries v. State*, 93 Texas Cr. 399, 248 S. W. 374.

As determinative of the last question of law certified the court referred to *Wise v. Becker*, Texas Civ. App., 294 S. W. 991. There a physician was sued for injuries suffered by his patient as the result of the negligent setting and bandaging of a broken arm. The patient in that case by a controverting affidavit alleged that the physician negligently set and bandaged the arm in Washington County and directed his patient to return to her home in Austin County, where she suffered intense pain and where, by reason of the unskilful setting and bandaging of the arm, the bones became incorrectly set, some of the ligaments were severed by the bandage and the arm was turned and twisted, resulting in loss of use. There the court held that the suit could not be brought in Austin County because there were no allegations of an affirmative act constituting a trespass committed by the physician in that county, the allegations showing on the contrary that everything the defendant did took place, not in Austin County in which the suit was brought, but in Washington County. In answer to the contention that there was a continuing trespass the court said:

In order to constitute a "continuing trespass," begun in one county and concluded in another, there must be some affirmative act constituting a trespass committed in each county. The negligent or unskilful setting and bandaging of appellant's broken arm in Washington County, from which her injury subsequently resulted in Austin County, did not constitute a "trespass" in the latter county, as that term is used in our venue statute.

Accordingly, the court answered the last question certified to the effect that the trespass complained of by the patient was not a continuing trespass authorizing suit in either Tarrant or Hunt County but was a trespass committed in Tarrant County, in which jurisdiction the suit should have been brought.

The net effect of the answers given by the Supreme Court to the certified questions was to result in the dismissal of the patient's suit against the physician.—*Lyle v. Waddle*, 188 S. W. (2d) 770 (Texas, 1945).

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examination of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, Dec. 8, page 1045.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Mar. 19-21. Sec. Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

ARIZONA: * Phoenix, Jan. 4-5. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

CALIFORNIA: *Written*. Los Angeles, March 11-14. Sec., Dr. Frederick N. Scatena, 1020 N St. Sacramento 14.

COLORADO: * Denver, Jan. 1-5. Final date for filing application is Dec. 17. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

DELAWARE: *Endorsement*. Dover, Dec. 19. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

IDAHO: Boise, Jan. 15. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Jan. 8-10. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, April 25-27. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.

KENTUCKY: Louisville, March 25-27. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Jan. 23-25. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 193 State St., Portland.

MICHIGAN: * Detroit, March 26-28. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MONTANA: Helena, April 1-3. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEVADA: Carson City, Feb. 4. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Jan. 28-31. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA: *Reciprocity*. Raleigh, Dec. 29. Final date for filing application is Dec. 19. Sec., Dr. Ivan Proctor, Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 1. Sec., Dr. G. M. Williamson, 4¼ S. Third St., Grand Forks.

OHIO: *Endorsement*. Columbus, Jan. 8. *Examination*. Columbus, March 19-22. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, March 23. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: * Jan. 23-26. Exec. Sec., Miss L. M. Conlee, 698 Failing Bldg., Portland 4.

PENNSYLVANIA: Harrisburg, January. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

RHODE ISLAND: * Providence, Jan. 3-4. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: * Pierre, Jan. 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TENNESSEE: * Memphis, Dec. 19-21. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

TEXAS: Austin, March 27-29. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, March or April 1946. Sec., Dr. F. J. Lawliss, Richford.

WASHINGTON: * Seattle, Jan. 14-16. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Charleston, Jan. 7-9. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

WISCONSIN: * Madison, Jan. 8-10. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

WYOMING: Cheyenne, Feb. 4. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

IOWA: Des Moines, Jan. 8. Dir., Division of Licensure & Registration, Mr. H. W. Greff, Capitol Bldg., Des Moines.

MICHIGAN: Ann Arbor and Detroit, Jan. 11-12. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, Jan. 2-3. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, Jan. 8-9. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

OKLAHOMA: Oklahoma City, Jan. 21. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: Portland, March 2. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

SOUTH DAKOTA: December. Sec., Dr. J. D. Alway, Aberdeen.

TENNESSEE: Memphis and Nashville, Dec. 17-18. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

30:215-320 (Sept.) 1945

- *Effect of Theophylline with Ethylenediamine (Aminophylline) and of Papaverine Hydrochloride on Experimental Myocardial Infarction in Dog. R. Mokotoff and L. N. Katz.—p. 215.
- *Primary Tumor of Left Auricle Simulating Mitral Stenosis. Miriam Hirschfeldt Field, M. A. Donovan and H. Simon.—p. 230.
- Paroxysmal Complete Heart Block, Produced by Ischemia of Auriculo-ventricular Node. A. Ross.—p. 238.
- Treatment of Auricular Fibrillation Occurring with Myocardial Infarction. J. M. Askey and O. Neurath.—p. 253.
- Value of Lead IVF in Cardiac Infarction. C. R. Burton.—p. 259.
- Observations on 2 Patients with Paroxysmal Ventricular Tachycardia Treated by Intravenous Administration of Quinidine Lactate. D. W. Chapman.—p. 276.
- Premature Beats of Sinus Origin: Electrocardiographic Demonstration of Clinical Case. A. J. Geiger and J. R. Goerner.—p. 284.
- Incomplete Heart Block Produced by Changes in Posture. J. H. Holmes and D. R. Weill Jr.—p. 291.

Aminophylline and Papaverine Hydrochloride in Myocardial Infarction of Dog.—Mokotoff and Katz studied the size of the myocardial infarcts eight weeks after ligation of the left anterior descending coronary artery in untreated dogs and dogs treated during this period with either aminophylline or papaverine. They found that papaverine and aminophylline, when given for a period of eight weeks in amounts comparable to therapeutic and nontoxic doses in man, reduce the size of experimental myocardial infarcts in dogs. Papaverine is more effective than aminophylline in this respect. There is an anatomic increase in the size and number of anastomotic channels in infarcted hearts with occlusion of a main coronary artery as compared with normal hearts. This was demonstrated by injection technic. No difference in the stage of healing was seen microscopically between the treated and the untreated dogs at the end of eight weeks. The difference in infarct size between the treated and the untreated dogs was not associated with any anatomic difference in the postmortem demonstration of the extent of the anastomoses. The difference in infarct size was due to a larger caliber of these anastomotic channels during life in the drug-treated dogs because of coronary vasodilatation and probably also of a more rapid early development. In these two ways the marginal area of the ischemic region was rendered sufficiently less ischemic and did not become necrotic. The rationale of early vasodilator therapy in recent myocardial infarction has been demonstrated, and both aminophylline and papaverine, especially the latter, have been shown to be effective.

Tumor of Left Auricle Simulating Mitral Stenosis.—A woman aged 48 with a primary tumor of the heart was diagnosed as having mitral stenosis. The presenting signs and the electrocardiographic and x-ray studies confirmed this diagnosis. The atypical course during the last few days of life was explained on the basis of unusual complications. It is this atypical course that recently has been reemphasized as being most helpful in the diagnosis of heart tumor. When the heart was examined during necropsy, a soft but resilient tumor was found filling the entire left auricle. Field and her associates identify the tumor as a pedunculated myxoma attached to the interauricular septum. They say that all primary neoplasms of the heart are of mesoblastic origin, with fibroma, myxoma, sarcoma and rhabdomyoma predominating. Myxoma is the most common and the most debated type of cardiac tumor. Thorel believed that myxomas are merely degenerative forms of

organized thrombi. Ewing states that separation of myxomas from organized thrombi may be based on the highly mucinous character of the stroma and on the presence of orderly radiating blood vessels and elastic fibers. In the reported case the size of the tumor, the site of attachment, the absence of layer formation (as would be expected in a thrombus), the healthy state of the endocardium and the histologic structure all seem to indicate that the tumor represents a true neoplasm. The pathologic aspects suggest that the use of digitalis in this condition may have caused early death of the patient.

American J. Digestive Diseases, Fort Wayne, Ind.

12:281-322 (Sept.) 1945

- High Dosage Vitamin C in Allergy. S. L. Ruskin.—p. 281.
- Globin Insulin: Clinical Study. A. Trasoff, C. Borden, S. S. Mintz.—p. 313.
- Pyogenic Infections of Perineum and Buttock Skin. C. J. Drueck.—p. 316.

American Journal of Physiology, Baltimore

144:331-476 (Aug.) 1945

- Development of Hypertension in Emotional Gray Norway Rats After Air Blasting. E. J. Farris, Eleanor H. Yeakel and H. S. Medoff.—p. 331.
- Oxidation of Pyruvate and Glucose in Brain Suspensions from Animals Subjected to Irreversible Hemorrhagic Shock, Carbon Monoxide Poisoning or Temporary Arrest of Circulation: Study of Effects of Anoxia. O. Rosenthal, H. Shenkin and D. L. Drabkin.—p. 334.
- Crystalline Vitamin B₆ in Relation to Cellular Elements of Chick Blood. C. J. Campbell, Margaret M. McCabe, R. A. Brown and A. D. Emmett.—p. 348.
- Osmotic Activity of Gastrointestinal Fluids After Water Ingestion in Rat. Robert Follansbee.—p. 355.
- Effect of Estrone and Diethylstilbestrol on Growth Rate of Rats and on Iodine Content of Thyroids. V. L. Koenig, F. X. Gassner and R. G. Gustavson.—p. 363.
- Nitrogen Balance and Plasma Protein Regeneration in Hypoproteinemic Dogs. R. D. Seeley.—p. 369.
- Visual Thresholds as Index of Modification of Effects of Anoxia by Glucose. R. A. McFarland, M. H. Halperin and J. I. Niven.—p. 378.
- Further Afferent Connections to Acoustic Cortex of Dog. A. R. Tunturi.—p. 389.
- Changes in Renal Clearance Following Complete Ischemia of Kidney. E. E. Selkurt.—p. 395.
- Electrocardiogram in Chronic Thiamine Deficiency in Rats. J. M. Hundley, L. L. Ashburn and W. H. Sebrell.—p. 404.
- Effect of Destroying Three Localized Cerebral Cortical Areas for Sound on Correct Conditioned Differential Responses of Dog's Foreleg. W. F. Allen.—p. 415.
- Local Fluid Loss in Trauma. J. L. Nickerson, with technical assistance of P. M. Porter and A. G. Buckman.—p. 429.
- Phosphate Turnover in Muscle During Shock. J. L. Bollman and Eunice V. Flock.—p. 437.
- Hemolytic Anemia Produced by Feeding of Fat and Choline. J. E. Davis and J. B. Gross.—p. 444.
- Effect of Certain Substances on Clotting Time in Vitro. C. F. Gerber and E. W. Blanchard.—p. 447.
- Osmotic and Electrolyte Concentration Relationships During Absorption of Autogenous Serum from Ileal Segments. M. B. Visscher, R. R. Roepeke and N. Lifson.—p. 457.
- Production of Polycythemia by Cobalt in Rats Made Anemic by Diet Low in Protein. J. M. Orten and Aline U. Orten.—p. 464.
- Osmotic and Electrolyte Concentration Relationships During Absorption of Salt Solutions from Ileal Segments. M. B. Visscher and R. R. Roepeke.—p. 468.

American Journal of Surgery, New York

69:281-414 (Sept.) 1945

- Problem of Delayed Union and Nonunion of Fractures. H. C. Fitt, R. F. Foote and M. A. L. Stevens.—p. 283.
- Glass Plastic Cast. R. Anderson and H. R. Erickson.—p. 299.
- Metallic Foreign Bodies and Electromagnetic Locator. J. J. Moorhead.—p. 306.
- Embedment of Vitallium Mandibular Prosthesis as Integral Part of Operation for Removal of Adamantinoma. L. Winter, J. C. Lifton and A. S. McQuillan.—p. 318.
- Thyroid Crisis: Pathogenesis of Hepatic Origin. B. J. Ficarra and E. A. Naclerio.—p. 325.
- Fibromatous Skin Lesions Produced by Repeated Blood Serum Injections in Humans. W. Marshall.—p. 338.
- Dissecting Aneurysm of Thoracic Aorta Due to Trauma. D. W. Leonard.—p. 344.
- Use of Whole Skin Grafts as Substitute for Fascial Sutures in Treatment of Hernias: Preliminary Report. G. B. Mair.—p. 352.
- Operative Cure of Inguinal Hernia in Infancy and Childhood. J. S. Coles.—p. 366.
- Primary Malignant Disease of Small Intestine. T. A. Shallow, S. A. Eger and J. B. Carty.—p. 372.

Am.-J. Syphilis, Gonorrhea and Ven. Dis., St. Louis
29:487-586 (Sept.) 1945

- *Penicillin Treatment of Neurosyphilis: Preliminary Report of 70 Cases Followed from Four to Twelve Months. A. S. Rose, L. D. Trevett, J. A. Hindle, C. Prout and H. C. Solomon.—p. 487.
- *Public Health Aspect of Malaria Therapy of Neurosyphilis. W. L. Bruetsch.—p. 494.
- Serologic Differentiation of Syphilitic and False Positive Serums. V. Scott, C. R. Rein, I. L. Schamberg, J. E. Moore and H. Eagle.—p. 505.
- *Prognosis of Syphilis: Critical Review of Clinical, Autopsy and Life Insurance Studies. I. L. Schamberg.—p. 529.
- Cooperation in Venereal Disease Control at Naval Training Center: Comparative Results of First Six Months of 1944 and Calendar Year 1943. R. H. Abrahamson and E. H. Harris.—p. 551.
- Arterial Embolism Following Injection of Iodobismutol. L. J. Underwood.—p. 556.
- Penicillin Treatment of Previously Untreated Acute Gonorrhea. R. Dyar, J. R. Scholtz and E. C. Hammond.—p. 562.
- Treatment of Gonococcal Arthritis with Sulfonamides and Artificially Induced Fever. S. Solomon.—p. 567.

Penicillin Treatment of Neurosyphilis.—Rose and his associates treated at the Boston Psychopathic Hospital 106 patients with symptomatic neurosyphilis. The great majority of the patients received in addition to the penicillin either malaria or fever cabinet therapy in approximately half the amount generally accepted as sufficient. Penicillin was administered intramuscularly in doses of 50,000 Oxford units per injection for a total of sixty injections (3 million units). The time interval of injection was varied according to a plan designed to give the maximum information. Clinical and serologic results in 70 cases followed from four to twelve months revealed that of the 70 cases 28 were improved, 37 were unchanged, and 5 were worse. The greatest percentage of improvement was found among the 49 cases diagnosed as dementia paralytica. The most striking result was seen in 6 cases of primary optic atrophy, in 5 of which there may have been arrest of visual loss. Spinal fluid examinations revealed an immediate response of an elevation in cells and total protein in most of the previously untreated patients, followed by a general gradual reduction in cell count, total protein and, later, a decrease in the Wassermann titer. Comparison between the clinical and serologic results did not show definite correlation at this stage. Penicillin is an active and effective therapeutic agent for late neurosyphilis, but comparison with the serologic results shown by 30 patients treated by older methods indicates that there is no striking difference at this period of observation. The authors believe that the time has not arrived for the distribution of penicillin for general use in the treatment of neurosyphilis.

Malaria Therapy of Neurosyphilis.—Bruetsch states that the occurrence of an incidental case of malaria in an institution in which malaria therapy is practiced is not proof that the malaria infection was contracted from an inoculated patient. A critical review of the instances of malaria which have been reported as having their origin from therapeutic malaria leaves the impression that definite proof for this assertion is lacking in almost all cases. The theory that maintenance of malaria in the human host for prolonged periods by direct blood inoculation leads to "asexualization of the plasmodium" is not shared by most malarialogists. Bruetsch is of the opinion that unfavorable ecologic requirements furnish the explanation for the fact that accidental transmission through therapeutic malaria practically never occurs.

Prognosis of Syphilis.—From a critical review of the literature Schamberg concludes that syphilis does not adversely influence life expectancy except through the known lethal effects of its serious late manifestations, particularly those of the central nervous and cardiovascular systems. There is no evidence that syphilitic infection per se, or antisyphilitic treatment, predisposes to tuberculosis, pneumonia, nephritis or other non-syphilitic diseases. Increased mortality of syphilitic patients is caused in part by deaths due directly to syphilis, in part to the higher death rate in segments of the population which have a high syphilis prevalence. Adequate antisyphilitic treatment will in the majority of cases prevent the development of the late manifestations of syphilis. The attitude of life insurance companies toward the syphilitic applicant is at present grossly unjust. Two sound courses of procedure would appear to be open to the insurance companies: (a) Disregard syphilis

entirely. (b) Perform routine serologic tests for syphilis on every applicant for insurance. In those in whom positive or doubtful tests are discovered, death losses may be obviated by clinical and laboratory examination and by setting up criteria of adequate treatment. Applicants found to have adequately treated latent syphilis may be granted standard insurance with no extra premium, and the mortality in this group will be found to be a function of the mortality of the socioeconomic and occupational groups of which it is composed. On the basis of simple and well accepted clinical and laboratory procedures, the life insurance companies may insure at standard rates the majority of syphilitic persons applying for insurance, with no risk of increased death losses. Employers may safely hire syphilitic persons and obviate increased compensation costs through similar clinical evaluation of their employees.

Cancer Research, Baltimore**5:561-608 (Oct.) 1945**

- System of Grading Carcinogenic Potency. I. Berenblum.—p. 561.
- Effect of Autoxidizability of Lipoidal Solvents on Sarcogenesis by 3,4-Benzpyrene. H. P. Rusch, G. C. Mueller and B. E. Kline.—p. 565.
- Influence of Age on Calcium in Epidermal Carcinogenesis Induced by Methylcholanthrene in Mice. V. Sunteff, C. Carrothers and E. V. Cowdry.—p. 572.
- Chronic Inflammation and Carcinogenesis. W. H. Woglom.—p. 576.
- Influence of Nontoxic Amounts of Estradiol on Carcinogenesis in Intact and Castrated Male and Female Mice of Marsh-Buffalo Strain. F. Bischoff, Louise P. Ingraham and Georgena J. Clarke.—p. 579.
- Influence of Breeding on Incidence and Onset of Carcinoma of Mammary Gland in Marsh-Buffalo Mice. F. Bischoff.—p. 582.
- Relative Importance of Milk Agent and Inherited Susceptibility to It in Development of Mammary Tumors in Mice. S. G. Warner, M. C. Reinhard and H. L. Goltz.—p. 584.

Epidemiol. Information Bulletin, Washington, D. C.**1:551-588 (Aug. 15) 1945. Partial Index**

- International Quarantine Diseases: I. Cholera. K. Stowman.—p. 551.
- Latest Information on Cholera in China.—p. 562.

1:589-630 (Aug. 31) 1945. Partial Index

- International Quarantine Diseases: II. Plague. K. Stowman.—p. 589.
- Trend of Syphilis Cases in Europe.—p. 603.

1:631-672 (Sept. 15) 1945. Partial Index

- Epidemiological Notes: Manila—Tuberculosis, Syphilis.—p. 631.
- Id.: Berlin—Dysentery, Typhoid Fever, Diphtheria.—p. 634.
- Id.: Rome—Pulmonary Tuberculosis.—p. 636.
- Id.: Helsinki—Paratyphoid Fever.—p. 636.
- Id.: Netherlands—Diphtheria Among Adults.—p. 637.
- Tuberculosis Mortality in Europe, 1937-1944.—p. 666.

Indiana State Medical Assn. Journal, Indianapolis**38:289-372 (Sept.) 1945**

- *Temporal Arteritis. R. M. Vandivier and J. O. Ritchey.—p. 289.
- Some Aspects of Cardiology as Seen at Veterans Administration, Indianapolis, Indiana. L. M. Sales.—p. 293.
- Allergic Manifestations. M. S. Fox.—p. 295.
- Penicillin by Mouth in Combination with Aluminum Dihydroxyamine-acetate. W. D. Paul, C. Rhomborg and Evelyn Wallace.—p. 298.
- Transverse Incision in Pelvic Operations. M. L. Curtner.—p. 301.
- Antiseptic Properties of Isopropyl Alcohol in Relation to Cold Sterilization.—H. M. Powell.—p. 303.

Temporal Arteritis.—Vandivier and Ritchey's 4 patients with temporal arteritis were all women past 69, were of a linear, asthenic type, were all of fair complexion with blue eyes and white hair and all had moderate hypertension. The most prominent symptom was pain over the region of the temporal artery and scalp, which was made worse by mastication and lying down. There was a moderate low grade fever, weight loss, weakness, sweating and a protracted period of asthenia and various degrees of incapacitation. Vague, generalized joint pains and pain in the back were common symptoms during the protracted convalescence. Clinical studies failed to show significant changes except a moderate leukocytosis and hypochromic anemia. The onset of the illness of 1 patient suggested heart failure; she had been sitting up in a chair for two weeks because of the pain experienced on lying down and had developed severe edema of the extremities. This edema disappeared when she changed from a sitting to a reclining posture. The onset in 1 other patient was attributed to dentures. In a third patient the onset had occurred following a slight injury to the head. These patients were nonsmokers. There was no evidence that resection of the involved artery was of therapeutic

value. In fact, 2 of the 3 patients who had a biopsy with a section of artery removed complained more bitterly of pain following this resection than before. Neither did they improve more rapidly than the patient who did not have a section of the artery removed. Low oscillometric readings in 1 case and absence of pedal pulsations in another suggest the possibility that the disease may be a generalized involvement of vessels other than the temporal vessels.

Iowa State Medical Society Journal, Des Moines

35:353-388 (Sept.) 1945

Medicine and Medical Education in the Postwar Era. E. M. MacEwen.—p. 353.

Treatment of Carcinoma of Prostate Gland, with Special Reference to Stilbestrol and Castration. L. E. Pierson.—p. 357.

Two Types of Feeble-minded Patients. Grace M. Sawyer.—p. 359.

35:389-426 (Oct.) 1945

Some Clinical Considerations About So-Called Blackwater Fever Syndrome. R. Castaneda.—p. 389.

Rehabilitation of Deaf and Blind. C. E. Chenoweth.—p. 392.

Tumor Clinic: Its Function, Organization and Operation. E. G. Zimmerman.—p. 396.

Bright's Disease: Case Report. J. E. Flynn.—p. 399.

Journal of Allergy, St. Louis

16:1-260 (Sept.) 1945

Atopy to Simple Chemical Compounds—Sulfonechloramides. S. M. Feinberg and R. M. Watrous.—p. 209.

Reactions to Antipneumococcus Rabbit Serum: Role of Reversed Passive Anaphylaxis and of Inherent Toxicity of Antiserum; Failure of Heat to Separate Sensitizing from Therapeutic Antibody; Experimental and Clinical Study. O. Swineford Jr., with technical assistance of Margaret B. Robinson.—p. 221.

Electrolyte Excretion with Various Forms of Therapy in Bronchial Asthma. A. V. Stoesser and Marguerite Booth.—p. 232.

Sputum Cholesterol in Bronchial Asthma. A. M. Fuchs, W. C. Spain and Margaret B. Strauss.—p. 236.

Atopic Sensitivity to Caroid (Papain): Report of Case, with Discussion of Some of Properties and Uses of Drug. H. Osgood.—p. 245.

Skin Sensitivity in the Aged: Fatality Following Intradermal Tests. J. R. Wiseman and Marguerite P. McCarthy-Brough.—p. 250.

Simple Method for Preparing Strained Meat Formulas. G. J. Stuart.—p. 253.

Atopy to Simple Chemical Compounds.—Feinberg and Watrous report that a number of workers in a pharmaceutical factory experienced symptoms of asthma and hay fever on inhaling small amounts of the dust of two organic substances, chloramine-T and halazone. These workers became sensitized while working where these chemicals were manufactured or packaged. When removed from contact with the chemicals they were relieved of their symptoms. The exhaust of some of the dust into the outside air contaminated the air sufficiently so that most of the sensitized persons stationed in other buildings as far as 300 yards away experienced respiratory symptoms when the wind blew from the direction of the chloramine factory. The study of the first patient gave evidence that this was a specific allergic phenomenon. Asthma and rhinitis due to the inhalation of dust of the water disinfectants chloramine-T and halazone were observed in 14 workers. These simple chemical substances of low molecular weight have been shown to behave as true atogens by producing immediate whealing skin reactions by direct test and by passive transfer. This experience suggests that such simple chemicals may act as complete antigens, that simple chemical allergens, as yet of unidentified nature, may be present in food, drink and air and that chemical irritants hitherto regarded as acting in a nonspecific manner may, on reexamination, exhibit specific allergenic behavior.

Reactions to Antipneumococcus Rabbit Serum.—According to Swineford, untoward reactions to therapeutic injections of antipneumococcus serum vary in incidence and severity. Death follows about one in five hundred injections of serum. This study was begun with the idea that the phenomenon of reversed passive anaphylaxis would explain the anaphylactic reactions that follow antipneumococcus serum injections in patients who had negative cutaneous, conjunctival and intravenous reactions to the serum. Experiments on guinea pigs and rabbits and a tabulation of some antipneumococcus serum reactions in patients are presented to support this idea. In reversed passive anaphylaxis the subject is sensitized by the presence of antigen and is shocked, after an interval, by immune

serum—a reversal of the sequence in conventional passive anaphylaxis. One batch of serum was found to be highly toxic for guinea pigs, suggesting the possible role of toxic serum in the circulatory type of reaction. Attempts to separate the sensitizing or anaphylactic antibody from the therapeutic antibody by heating the serum were unsuccessful. The number and severity of circulatory and reversed passive-anaphylactic reactions to antipneumococcus rabbit serum might be lessened by intravenous tests for toxicity on guinea pigs before releasing serum for clinical use, by the uniform use of immune serum instead of or in conjunction with normal serum for cutaneous, conjunctival and intravenous tests for sensitivity and by a second intravenous test dose of perhaps 3 cc. of immune serum.

Journal Industrial Hygiene & Toxicology, Baltimore

27:183-246 (Sept.) 1945

Microdetermination of Stibine. S. H. Webster and L. T. Fairhall.—p. 183.

Fluorescent Mineral Dusts as Tracers for Localization of Particles in Tissue. H. Yagoda and D. D. Donahue.—p. 193.

Potency of Silica Particles of Different Size. B. D. Tebbens, R. Z. Schulz and P. Drinker.—p. 199.

Concentration of Arsenic in Tobacco Smoke Determined by Rapid Titrimetric Method. M. D. Thomas and T. R. Collier.—p. 201.

Fatal Case of Poisoning by Oxides of Nitrogen. A. T. Rossano Jr.—p. 207.

Journal of International College of Surgeons, Chicago

8:308-403 (July-Aug.) 1945

Frontal Sinus as Pathway of Infection to Calvarium and Brain. S. R. Skillern Jr.—p. 308.

Arteriovenous Aneurysms in Region of Circle of Willis from Ophthalmologic Aspect. E. B. Spaeth and W. E. Krewson.—p. 313.

Naval Medical Officer's Surgical Problems in Amphibious Warfare. R. A. Kern.—p. 326.

Huge Pedunculated Fibrolipoma: Report of 2 Cases and Review of Literature on Vulvar Fibromas. D. Kershner and A. L. Shapiro.—p. 333.

Subtotal Gastric Resection for Peptic Ulcers. S. J. Carnazzo.—p. 336.

Torsion of Gallbladder Associated with Acute Appendicitis. C. W. Husband and N. L. Schmitt.—p. 348.

Role of Second Toe in Bunions. A. Gottlieb.—p. 352.

Medical and Surgical Services (Military and Civil) in Dominican Republic. M. A. Robiou.—p. 354.

Hospital Assistance. M. A. Manzani.—p. 369.

Brief Historical Data on Some of Oldest Hospitals of the Americas. A. Molina.—p. 376.

Treatment of Cancer of Penis: Present Concepts. A. H. Roffo and G. Jacaprar.—p. 384.

Splanchnic Abdominal Pains. M. Lopez Esnaurrizar.—p. 400.

Journal of Nat. Cancer Inst., Washington, D. C.

6:1-88 (Aug.) 1945

Nutritional Factors Influencing Origin and Development of Cancer. H. P. Morris.—p. 1.

Occurrence of Hepatomas in Rats Following Ingestion of 1,2-Benzanthracene. Florence R. White and A. B. Eschenbrenner.—p. 19.

Estimation of 2-Aminofluorene and Related Compounds in Biologic Material. B. B. Westfall.—p. 23.

Effects of Cystine and Caloric Restriction on Incidence of Spontaneous Pulmonary Tumors in Strain A Mice. C. D. Larsen and W. E. Heston.—p. 31.

Variations in Occurrence of Pathologic Calcification, Nephritis and Amyloidosis in Mice Fed Control and Modified Diets. W. E. Heston, C. D. Larsen and Margaret K. Deringer.—p. 41.

Cathectic Activities of Neoplasm and of Tissues of Normal and Tumor Bearing Mice Correlated with Histologic Changes. Mary E. Maver and Thelma B. Dunn.—p. 49.

Desaminases for Ribonucleic and Desoxyribonucleic Acids. J. P. Greenstein and H. W. Chalkley.—p. 61.

Vascular Reactions of Normal and Malignant Tissues in Vivo: I. Vascular Reactions of Mice to Wounds and to Normal and Neoplastic Transplants. G. H. Algire and H. W. Chalkley.—p. 73.

Journal of Neurophysiology, Springfield, Ill.

8:275-338 (Sept.) 1945

Generalized Atonia and Profound Dysreflexia Following Transection of Brain Stem Through Cephalic Pons. A. D. Keller.—p. 275.

Facilitation of Flexion Reflex in Relation to Pain After Nerve Injuries (Causalgia). E. L. Porter and A. N. Taylor.—p. 289.

Electrical Activity of Denervated Mammalian Skeletal Muscle as Influenced by D-Tubocurarine. A. R. McIntyre, R. E. King and A. L. Dunn.—p. 297.

Electrical Activity of Thalamus and Basal Ganglia in Decorticate Cats. R. S. Morison and D. L. Bassett.—p. 309.

Nerve Regeneration in Cats on Vitamin B₁₂ Deficient Diets. C. Berry, C. Neumann and J. C. Hinsey.—p. 315.

Lumbar Sympathetic Dermatomes in Man Determined by Electrical Skin Resistance Method. C. P. Richter and B. G. Woodruff.—p. 323.

Surgery, St. Louis

18:267-400 (Sept.) 1945

- Lateral Cervical (Branchial) Cysts and Fistulas: Clinical and Pathologic Study. H. B. Neel and J. de J. Pemberton.—p. 267.
- Use of Skin Flaps in Repair of Scarred or Ulcerative Defects Over Bone and Tendons. E. C. Padgett and J. H. Gaskins.—p. 287.
- Practical Aspects of Treatment of Burns. S. A. Siegel, L. V. Marrone and D. Gordon.—p. 298.
- Mortality Factors in Acute Appendicitis. S. O. Hoerr.—p. 305.
- Technic and Results of Primary and Secondary Pullthrough Operation After Removal of Tumors of Rectum and Rectosigmoid. F. Mandl.—p. 318.
- Acute Colonic Obstruction Secondary to Carcinoma of Sigmoid Colon with Gangrene of Extensive Segment of Large Bowel: Case Report. A. J. Kremen.—p. 335.
- Use of Transverse Abdominal Incision in, and Comments on, Surgical Treatment of Infantile Pyloric Stenosis. E. Horgan.—p. 339.
- Gangrenous Cystitis: Etiologic Classification and Treatment. D. S. Cristol and L. F. Greene.—p. 343.
- *Human Fibrin Foam with Thrombin as Hemostatic Agent in General Surgery: Experimental Studies and Clinical Use. O. T. Bailey, F. D. Ingraham, O. Swenson, J. J. Lowrey and E. A. Bering.—p. 347.
- *Occurrence of *Bacillus histolyticus* in Accidental Wounds Without Recognized Specific Infection. I. C. Hall.—p. 369.
- Occurrence and Possible Significance of *Bacillus Tetani* in Compound Fractures, Lacerations, Gunshot Wounds and Burns. I. C. Hall.—p. 377.
- Gynecomastia: II. Report of 5 Additional Cases. E. F. Goel.—p. 388.
- Case Report of Bilateral Arteriovenous Aneurysms of Posterior Tibial Arteries, with Interesting Observation Concerning Effect of Vasodilatation. J. R. Plank.—p. 391.
- Improved Method of Circumcision: Use of Relaxation Incisions, Cotton Ligatures and Sutures. I. Gersh.—p. 394.

Fibrin Foam with Thrombin.—Bailey and his co-workers found that fibrin foam with thrombin is an effective absorbable hemostatic agent in the liver, peritoneal cavity, abdominal wall, kidney and lung. In each of these locations the absorption of the material is accompanied by only slight tissue reaction. Clinical appraisal of fibrin foam with thrombin as an absorbable hemostatic agent in general surgery has been carried out on 240 patients. It has proved effective in controlling oozing surfaces and venous bleeding under a wide variety of circumstances, including wounds in patients with hemophilia. The use of fibrin foam with thrombin should not replace the careful control of bleeding by means of careful dissection and adequate placing of sutures. It should be reserved for those situations in which an absorbable hemostatic agent is desirable to prevent the injuring of vital anatomic structures or to control oozing which is not easily stopped by conventional methods, as in the beds of tumors and the cut surface of parenchymatous organs.

Bacillus histolyticus in Accidental Wounds.—Hall found *Bacillus histolyticus* in 18 of approximately 2,500 civilian wounds. Only 1 of these resulted in death. There were 7 cases of compound fractures in which *B. histolyticus* was discovered. All but 1 of these patients survived, 2 without infection, 1 with trivial infection and 3 with serious infections. With one exception *B. histolyticus* appeared only in the cultures made from the debrided tissues. In 1 instance *B. histolyticus* persisted until the twenty-fifth day, at which time the leg was amputated. Of the 5 cases of lacerations from which *B. histolyticus* was recovered, 2 wounds healed without infection and 1 healed after a minor infection, while 2 healed after serious infection. *B. histolyticus* was demonstrated again only in the debrided tissues from these cases. In 2 of the 3 patients with gunshot wounds *B. histolyticus* was recovered only from the debrided tissues; in the third case it was also discovered later. In both patients with burns *B. histolyticus* was recovered from the debrided tissues but not later. The debrided tissues were minutely studied in these cases as a means of determining the potential pathogenic agents. Hall does not advocate such cultures routinely, since they have little relation to the subsequent development of infections if surgical treatment is instituted within a reasonable time. Hall regards the occurrence of *B. histolyticus* in wounds solely as an expression of its widespread occurrence in nature. If wounds are promptly and adequately debrided, it rarely persists. If gaseous gangrene develops, the peculiar lesions produced by this organism in pure infections are likely to be masked and overlooked. It may persist in a mixed infection for twenty-five to thirty-seven days without giving clinical indications of its presence.

United States Naval Med. Bulletin, Washington, D. C.

45:611-818 (Oct.) 1945. Partial Index

- Treatment of Combat Fatigue in Forward Area Hospital. J. W. Owen, C. G. D. Tillman and R. A. Brunner.—p. 611.
- Evaluation of Motion Sickness Questionnaire in Predicting Susceptibility to Seasickness. J. E. Birren, M. B. Fisher and R. T. Stormont.—p. 629.
- Evaluation of Comparative Efficiency of Various Methods of Mass Radiography. C. F. Behrens, H. E. Hilleboe, H. F. A. Long and J. Yerushalmy.—p. 635.
- Mechanism of T Deflection in Precordial Electrocardiogram. A. H. R. Douglas.—p. 647.
- Fibrous Dysplasia: "Cystic" Lesion of Bone. H. M. Stauffer and P. J. Fitzgerald.—p. 653.
- Eosinophilic Granuloma of Bone. P. Michael and N. C. Norcross.—p. 661.
- *Diphtheria Outbreak at Large Naval Training Center. D. C. Young, B. B. Breese, A. F. Errington and others.—p. 669.
- Sprained Ankles: New Form of Treatment. W. Scott.—p. 679.
- Nephropexy. F. A. Beneventi.—p. 685.
- Method for Removing Ureteral Calculi by Continuous Internal Traction. D. T. Prehn.—p. 695.
- Surgical Phase of Amphibious Warfare. J. N. O'Neill.—p. 705.
- Care of Thoracic Wounds as Adapted to Pacific Theater. W. L. Rogers and E. Holman.—p. 711.
- Special Treatment Ward for Critically Injured. R. P. McCombs.—p. 717.
- Penetrating Wounds of Face and Neck: Tentative Treatment. E. N. Broyles.—p. 723.
- Prevention of Transfusion Reactions. H. K. Russell and F. T. Hess.—p. 725.

Diphtheria Outbreak at Naval Training Center.—During two late summer months of 1944 an outbreak of diphtheria occurred in three companies of one camp at a large naval training center. Twenty-four patients and 16 carriers were admitted to the dispensary or hospital. Contacts in barracks and in sick-bay were responsible for the cases. The outbreak was complicated by a concurrent epidemic of streptococcal disease. The cases of diphtheria were mild to moderate in severity and were apparently caused by the intermedius type. No deaths or serious complications occurred. The majority of the men had positive Schick reactions. A history of previous immunization for diphtheria did not guarantee a negative Schick test or the prevention of clinical diphtheria. Three cases of diphtheria developed in men with known negative Schick tests. Rigorous isolation of the patients and affected companies prevented further spread of the infection.

Wisconsin Medical Journal, Madison

44:844-930 (Sept.) 1945

- Physiologic Considerations in Postoperative Treatment. A. L. Mayfield.—p. 865.
- Low Back Pain Due to Functional Decompensation of Back. E. D. W. Hauser.—p. 869.
- Abnormal Genital Bleeding in Women Past Forty: Its Clinical Significance. B. E. Urdan and J. A. Klieger.—p. 873.
- *Causes of Failure After Gastric Resection for Ulcer: Myth of Intractable Ulcer Together with Note Concerning Importance of Vascular Factor in Genesis of Ulcer. O. H. Wangenstein.—p. 878.
- Simplified Transfusion Apparatus for Infants. A. W. Adamski.—p. 888.

44:977-1040 (Oct.) 1945

- Treatment of Urinary Tract Infections. C. R. Marquardt.—p. 977.
- Treatment of Backache: Neurosurgical Aspects. R. H. Quade.—p. 979.
- Osteitis Deformans (Paget's Disease): Use of Aluminum Acetate in Treatment. Report of Case. L. E. Fazen.—p. 983.
- Gallbladder Series. T. H. Flarity, H. A. Raube, W. A. Munn and T. J. Snodgrass.—p. 984.
- Cardiopericardioplexy with Results: Report of Case. C. L. Kline.—p. 987.
- Jejunal Ulcer as Complication of Gastroenterostomy. L. W. Hipke.—p. 989.
- Human Ornithosis: Case. J. L. Ford and R. W. Kispert.—p. 991.

Gastric Resection for Ulcer.—At Wangenstein's clinic bleeding ulcer appears to be a more serious problem than perforated ulcer. Operating on such patients before their condition becomes critical will diminish deaths from hemorrhage. Such operations are trying and should be undertaken only by those prepared to deal with the exigencies of a gastric resection under difficult circumstances. Even superficial gastric erosions may provoke serious or even fatal hemorrhage. Local impairment of blood flow to the stomach and duodenum renders the mucosa more susceptible to injury by the acid peptic digestive juice. Severe gastric hemorrhage has been observed in a patient with arterial thrombosis of the intramural gastric vessels. Gastrojejunal ulcer and gastrojejuno-colic fistula after gastric resection are traceable to defects in the initial operation. No recurrent ulcers have been observed in more than 300 patients who have undergone resections for duodenal or gastric ulcer.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

29:389-444 (Aug.) 1945

- Epidemic Keratoconjunctivitis in the Middle East: Clinical and Experimental Study. A. Feigenbaum, I. C. Michaelson and W. Kornblith.—p. 389.
 Etiology of Trachoma: Critical Review of Present Knowledge. J. O. W. Bland.—p. 407.
 *Analysis of 100 Cases of Strabismus Treated Orthoptically. R. U. Gillan.—p. 420.
 Penetration of Penicillin Into the Eye. R. E. Wright and C. H. Stuart-Harris.—p. 428.

Strabismus Treated Orthoptically.—Gillan presents an analysis of 100 cases in which the complete course of treatment was given in an orthoptic department. The main points on which information was sought were (1) the deviation present at the conclusion of treatment compared with that present at the beginning, whether without or with recourse to operation, and (2) the degree of binocular vision present at the conclusion of treatment compared with that existing at the beginning of treatment. The material for review consisted of 100 consecutive patients, 51 girls and 49 boys aged from 5 to 12 years, the average being 9 years. The deviations present were from 3 to 60 degrees. Of 63 patients treated by orthoptic means only, the eyes of 36 became straight or nearly straight and developed good stereoscopic vision. The conclusion is reached that an essential prerequisite to successful treatment by orthoptics only is the existence of simultaneous perception and fusion and a strabismus of not more than 25 degrees, preferably much less, viz. about 10 degrees. Of 37 patients receiving orthoptic treatment plus operation, the eyes of 23 became straight or nearly straight, and 17 developed good or fair stereoscopic vision. Good stereoscopic vision is an important factor in maintaining orthopsis even when operation has been performed. Of a control series of 50 patients who were under observation for an average of nine months and had no treatment except glasses, none developed orthopsis or stereoscopic vision. Analyzing the refractive findings in the 100 cases under review and the effects present as a result of wearing glasses at the beginning of treatment by orthopsis, the author says that only 3 were straightened with glasses and 25 showed reduction of the squint.

British Journal of Radiology, London

38:267-300 (Sept.) 1945

- Planning of Diagnostic Radiologic Department in Large General or Teaching Hospital. E. R. Williams.—p. 267.
 Causes and Prevention of Radiotherapeutic Edema of Larynx. B. Jolles.—p. 278.
 War Wounds of Orbit and Eyeball. D. B. McGrigor and E. Samuel.—p. 284.
 Review of Scandinavian Literature on Neuro-radiology, 1939-1944. H. Davies.—p. 290.
 Eggs of Bombyx Mori as Material for Radiobiologic Research. J. P. Lamarque. C. Gros.—p. 293.
 Note on Effect of Spraying "Contact" Therapy Applicators with Aluminium. W. J. Meredith.—p. 297.
 Isolated Secondary Deposit in Terminal Phalanx in Case of Squamous Cell Carcinoma of Lung. D. W. Smithers and L. R. W. Price.—p. 299.

British Medical Journal, London

2:273-308 (Sept. 1) 1945

- Results of Routine Investigation for Rh Factor at N. W. London Depot. G. Plaut, M. L. Barrow and J. M. Abbott.—p. 273.
 Acute Inversion of Uterus. J. V. O'Sullivan.—p. 282.
 Administration of Penicillin by Intramuscular Infusion. E. C. Turton.—p. 283.
 *Use of Benzadrine Sulfate by Psychopaths: Problem of Addiction. H. J. Shorvon.—p. 285.
 *Erythema Nodosum and Tuberculosis. W. D. Gray.—p. 286.
 Midwifery and the Family Doctor. D. D. Logan and E. K. MacKenzie.—p. 94.

Use of Amphetamine Sulfate by Psychopaths.—Certain psychopaths can tolerate amphetamine (benzadrine) in enormous doses and benefit from the therapy, as opposed to normal persons, who are intolerant of high doses. Shorvon's patient, a man aged 35, complained of depression, insomnia and nervousness. There was a family history of psychopathy. The patient

had been a nail biter, had had periodic attacks of stammering, was enuretic up to the age of 12 and was not adapted at school. He was an unhappy reserved man with few friends, stubborn, anxious, highly strung; sensitive and easily depressed. In 1939 he had been a fire fighter and had gone through the London "blitzes" but had to "steel himself" to do so. At the time of admission he gave no indication that he had been taking amphetamine. Later he admitted that he had been taking large doses of amphetamine sulfate for over four years, the daily consumption being from twenty-five to thirty 5 mg. tablets for many months periodically. The only apparent withdrawal symptoms were increased restlessness and sleeplessness. There were no physical ill effects. After stopping the amphetamine the patient had great hunger, which confirms the fact that amphetamine reduces the appetite. Although the use of amphetamine was abruptly stopped when the patient entered the hospital, he made no request for it. Sleeplessness induced by amphetamine was well compensated by barbitals. This case and others reported in the literature convinced the author that there is no evidence of physiologic damage from amphetamine even in prolonged and massive dosage.

Erythema Nodosum and Tuberculosis.—Of 9 patients with erythema nodosum, 3 were contacts of known cases of pulmonary tuberculosis, and another gave a family history of tuberculosis. Two had been visitors in a tuberculous household, and 2 more had relatives suffering from chronic cough who refused to be examined. Only 2 gave no history of suggestive contact. All the children gave a positive tuberculin reaction. The tuberculous lesions encountered were pleural effusion, pulmonary tuberculosis, phlyctenular conjunctivitis with corneal ulcers, tuberculous cervical glands, enlarged or calcified hilar glands and a simple primary complex. No history of rheumatism was given by any of the patients. Gray thinks that every patient with erythema nodosum should be regarded as having been newly infected with tuberculosis, and therefore search should be made among family and friends for the source of infection. While nothing serious may develop, the occurrence of ill health and minor tuberculous lesions is frequent enough to warrant attendance at a tuberculosis dispensary in every instance.

Lancet, London

2:293-324 (Sept. 8) 1945

- *Renal Syndrome of Wide Distribution Induced Possibly by Renal Anoxia. B. G. Macgrath, R. E. Havard and D. S. Parsons.—p. 293.
 *Transfusion and Anemic Heart. E. P. Sharpey-Schafer.—p. 296.
 Local Spread of Drugs in Oral Cavity. A. B. MacGregor and D. A. Long.—p. 299.
 The "Perfect AP" (Artificial Pneumothorax): How It Works. G. Day.—p. 300.
 Toxin and Antitoxin Studies of Gas Gangrene in Man. J. D. MacLennan and R. G. MacFarlane.—p. 301.

Renal Syndrome Possibly Induced by Anoxia.—The syndrome discussed by Macgrath and his associates is a condition of impaired renal function, which usually develops in an acute illness. Oliguria or anuria is commonly the first sign. In patients who survive there is also a postanuric period of impaired renal function with nitrogen retention and often a copious unconcentrated urine. The postanuric period may last for several weeks, but eventually there is complete recovery. The reversible nature of the renal failure is the chief feature that distinguishes this syndrome from the other forms of nephritis. Certain of the features of the syndrome under consideration have been described by Fishberg under the title "larval" or "necrotizing" nephrosis or under the term "pre-renal azotemia." Macgrath briefly described the syndrome in 1944 under the term "tubulovascular syndrome." The main features have been noted in widely differing conditions. The authors mention the anuria seen in blackwater fever, incompatible blood transfusion and the crush syndrome. Other conditions in which features of this renal syndrome have been observed are septic abortion, concealed accidental hemorrhage, cholera, yellow fever, Weil's disease, diabetes, war injuries and pernicious anemia. Three different causes have been suggested for this syndrome: mechanical blockage, a nephrotoxic effect and renal anoxia. The theory of mechanical

blockage does not account for the many similar cases of anuria in which pigment is absent, and it has now been abandoned. In weighing the last two hypotheses the wide distribution of the syndrome must be taken into consideration. The nephrotoxic theory demands that a wide variety of toxins, many of them hypothetical or at least unidentified, shall all produce syndromes which are similar in their clinical and pathologic appearances. The one common factor may be a temporary shortage of oxygen. The evidence available favors the hypothesis that renal anoxia plays a large part in producing this syndrome, in that it results in damage to the renal epithelium and consequent impairment of renal concentrating power. The oliguria and anuria that occur in many instances are probably the direct result of the disturbances of renal blood flow that follow peripheral circulatory failure. If this is correct the prevention of anuria in these conditions will then depend more on the support given to the circulation than on efforts to keep the urine alkaline. The authors suggest that "renal anoxia" is a suitable name for the syndrome.

Transfusion and the Anemic Heart.—Sharpey-Schafer studied the effects of transfusion on circulatory dynamics by means of cardiac catheterization, a method allowing serial measurement of the output of the heart and the pressure in the right auricle. The blood volume in severe anemia is reduced and the right auricular pressure, cardiac output and percentage utilization of available arterial oxygen are increased. Transfusion raises the right auricular pressure and in normal subjects increases cardiac output, but in severe anemia cardiac output may fall. Acute pulmonary edema follows in some cases and the blood pressure may rise. This falling cardiac output is similar to Starling's overloaded heart-lung preparation, in which increased venous filling pressure results in falling cardiac output. Whereas intravenous infusions of 2,000 cc. at rates up to 160 cc. per minute have no deleterious effect on the normal human heart, Sharpey-Schafer found that 500 cc. at more moderate rates may overload the anemic heart. The usual practice of small transfusions of concentrated corpuscles is correct, but even a pint may prove too much. Assessment of venous filling pressure, therefore, is of some importance when transfusions are given. Clinical observation of the neck veins will give such information and prevent many disasters. The propped-up position is probably the best for transfusing severely anemic patients, for in this posture the right auricular pressure is lower than in the supine position. Clinical signs may not always prove adequate, and the most difficult cases require full investigation if treatment is to be rational.

Medical Journal of Australia, Sydney

2:65-96 (July 21) 1945

- Bronchiectasis. H. B. Harwood.—p. 65.
Clinical Differentiation of Appendicitis and Dysenteries. T. F. Rose.—p. 72.
Blood Groups in Territory of Papua. J. J. Graydon and R. T. Simmons.—p. 77.
Toxemia. E. Singer.—p. 80.

2:97-132 (July 28) 1945

- Influence of Diet in Health and Disease. N. M. Gutteridge.—p. 97.
Infections with Psittacosis in Adelaide. C. Yeatman and Jessica McEwin.—p. 109.
Systemic Administration of Penicillin. J. Dow and P. Martin.—p. 114.

Archives Françaises de Pédiatrie, Paris

2:1-44 (No. 1) 1944. Partial Index

- *Generalized Subcutaneous Emphysema in Laryngeal Diphtheria: Contribution to Its Pathogenesis. M. Janbon, J. Chaptal and J. Andréani.—p. 1.
Infectious Hepatonephritis and Nuclear Icterus. J. Boucomont.—p. 8.

Emphysema in Laryngeal Diphtheria.—Janbon and his co-workers report 2 cases of subcutaneous emphysema complicating diphtheria in 2 girls aged 8 and 10 years. Diphtheria bacilli were demonstrated in the pharynx. In the first case two injections of antidiphtheric serum (15,000 and 10,000 units) proved ineffective; a third injection of 70,000 units was given and a tube inserted. The tube became obstructed by a pseudo-membrane and was immediately removed. The inspiratory obstruction was only partially reduced. Subcutaneous emphy-

sema of the neck and thorax was noted the next morning. It subsided slowly within the next six days. There was less respiratory embarrassment, but the presence of air in the mediastinum was suggested by the fact that several days passed before the dyspnea had disappeared. The presence of a pseudo-membrane in the lumen of the bronchi may have caused the emphysema. This concept was supported by the observations in the second case. A single dose of antidiphtheric serum (35,000 units) was administered and within twelve hours the respiratory embarrassment was somewhat improved. A sudden fit of coughing caused a return of the inspiratory and expiratory dyspnea, and within half an hour a subcutaneous emphysema became manifest in the neck, the face, the eyelids and the upper part of the thorax. Tracheotomy was performed. During intubation a pseudomembrane 4 cm. long was expelled in the shape of a fibrinous cast of a bronchial duct with two branches. Respiratory function was restored, but the emphysema increased within the next twenty-four hours. The presence of air in the soft tissues was demonstrated by x-ray. There was also atelectasis and emphysema. The emphysema slowly disappeared in the course of a few days. Tracheotomy is the method of choice, since intubation removes only the laryngeal obstruction, while tracheotomy provides for the escape of air from the mediastinum as well.

Annales Pédiatriques, Basel

164:169-224 (April) 1945

- *Dystonia Musculorum Progressiva (Torsion Dystonia). Cornelia de Lange.—p. 169.
Superior Mediastinal Pleurisy in Young Children. G. Hartmann-Stehelin.—p. 182.
Hemopericardium of Traumatic Origin Presenting Aspects of Pericarditic Cirrhosis. L. Wolff-Wiesinger.—p. 209.

Torsion Dystonia.—Cornelia de Lange made microscopic studies of the brain, the greater part of the spinal cord and the visceral organs of a Jewish man who died at 45 and in whom the disorder began at the age of 8. The diagnosis of dystonia musculorum progressiva was verified by competent neurologists. The corpus striatum proved practically normal, but different parts of the brain and the cord presented anomalies which doubtless had a degenerative "anlage." The author is of the opinion that in the idiopathic or degenerative cases of dystonia there exist no specific anatomic changes but that the disorder is the result of a disturbance in the dynamics of the brain, spinal cord, nerves and muscles. The basis of this disturbance might be a metabolic process which produces no changes that are microscopically demonstrable.

Medicina, Buenos Aires

5:347-476 (July) 1945. Partial Index

- *Myxedema of Hypophysial Origin: Case. E. B. Del Castillo, N. Quirno, M. A. Gambin and J. Manzoli.—p. 416.

Myxedema of Hypophysial Origin.—According to Castillo and his collaborators myxedema of hypophysial origin is a variety of Simmonds' disease in which the pituitary body, the thyroid, the adrenals and the gonads are atrophied. The predominant symptoms are those of thyroid insufficiency. The diagnosis is made in women on the presence of symptoms of thyroid, gonadal and adrenal insufficiency with atrophic vaginal mucosa, infantile uterus, loss of libido, bilateral atrophy of breasts and scanty or absent pubic and axillary hairs. Male patients are of the eunuchoid type with gonadal insufficiency. The arterial pressure is low. The intolerance of the patient to thyroid therapy confirms the diagnosis. The case reported by the authors is the eleventh in the literature. A woman aged 35 with myxedema and typical symptoms of the disease was given thyroid twice. In both instances the symptoms of hypothyroidism improved, but acute symptoms of adrenal insufficiency supervened and thyroid therapy had to be stopped. Patients with hypophysial myxedema may improve on daily administration of 0.05 Gm. of dried thyroid combined with serum gonadotropin treatment. Discontinuation of serum gonadotropin in the course of the treatment results in reappearance of the harmful effects of thyroid therapy. Thyroid therapy alone aggravates the adrenal insufficiency, while serum gonadotropin alone exerts no favorable effect on the clinical symptoms of myxedema.

Book Notices

Treatment in General Practice. By Harry Beckman, M.D., Professor of Pharmacology, Marquette University School of Medicine, Milwaukee, Wisconsin. Fifth edition. Cloth Price, \$10. Pp. 1,070. Philadelphia & London: W. B. Saunders Company, 1945.

When a medical book is in sufficient demand to pass into a fifth edition within fifteen years there must be reason for such popularity. There is no doubt that Beckman's *Treatment in General Practice* is widely used by the student, teacher and practitioner; nor is there any doubt concerning the usefulness of this volume and the wealth of information which it contains. Serving as a reference book and as a textbook, the work provides information on fluke infections, worm infections, allergic disturbances, deficiency diseases, endocrine disturbances, disturbances of menstruation, obesity and malnutrition, diseases of the gastrointestinal tract, diseases of the liver and bile passages, diseases of the respiratory tract, nephritis and nephrosis, disturbances caused by excessive heat, the anemias, blood disturbances other than the anemias, circulatory disturbances, eclampsia, hyperemesis gravidarum, genital urinary infections and stone, diseases of the lungs, diseases of geriatrics, diseases of the skin, acute poisoning, burns, shock, crush and blast syndromes, and toxic and other special features of sulfonamide therapy. The present edition includes for the first time entities from acute infections, lymphocytosis and airsickness to the Rh factor syndromes, toxoplasmosis and urogenital syndrome.

Concerning the purpose of the book, no explanation is needed for those who are familiar with its contents. Others who are yet to be introduced may anticipate with much pleasure a collection of facts concerning the treatment of disease, a collection which is based on an extensive bibliography and tempered by the author's experience. The format and style of writing continue to be pleasant, the manner of treatment of the subject to the point and offered with a minimum of waste of words. Occasionally one wonders about the need for mentioning treatments which are admitted by the author to be of little or no value, for example the use of patulin for common colds, but perhaps some will argue that the practicing physician will frequently want such negative information if for no other reason than to refresh his memory and perhaps convince patients who urge him to "do the latest" on the basis of newspaper articles.

Compared with other books offered as a source of information on treatment in general practice, this book will continue to rank high in favor. It is the sort of volume that one likes to have conveniently close, as it will be used frequently and freely.

Key Groves' Synopsis of Surgery. Edited by Cecil P. G. Wakeley, C.B., D.Sc., F.R.C.S., Senior Surgeon to King's College Hospital, London. Twelfth edition. Cloth Price, \$6. Pp. 632, with 208 illustrations. Baltimore: Williams Wood & Company, 1945.

As the title implies, this volume represents an outline of surgery, including practically all its specialties. Of necessity, the material is brief but is arranged in a very clear, concise manner because of skilful use of headings and subheadings. The illustrations are poorly executed and not too well chosen. Numerous errors in principles are found. Too much emphasis is placed on the use of heat in the treatment of burn shock. The use and value of tetanus toxoid is not mentioned. The amount of tetanus antitoxin (viz. 500 units) recommended in the prophylaxis of tetanus would be considered too small by most surgeons. The discussion on treatment of shock is not very modern. The same may be said of the treatment of peritonitis; too little attention is paid to the use of decompression. The advice to give "prostigmin (1 cc.) every hour for six hours" in the treatment of peritonitis would be strongly condemned by most surgeons. The recommendation to resort to "continuous saline infusion by rectum" is highly dangerous without specific warning about the use of too much salt. No mention is made of the use of intravenous glucose or amino acids in the treatment of peritonitis. In fairness to the volume it should be emphasized that an enormous amount of factual data is included, but so much important data including pathology and physiology are omitted that use of the book by students would appear misleading and even dangerous.

The Intervertebral Disc with Special Reference to Rupture of the Annulus Fibrosus with Herniation of the Nucleus Pulposus. By P. Kellie Bradford, M.D., and R. Glenn Spurling, M.D. Second edition. Fabrikoid Price, \$1. Pp. 192, with 70 illustrations. Springfield, Illinois: Charles C. Thomas, Publisher, 1945.

After reviewing the second edition of this book, one is at a loss to understand the excuse for its publication, for with the exception of the chapter on cervical disks there is essentially no change. Readers have a right to expect that one who assumes to write a book is an authority. At least the book should be up to date. It is a volume of uncertainty and equivocation at a time when recent advances have completely transformed the field, both in diagnosis and in treatment, to one of accuracy and certainty. And they have stood the test of time. The diagnosis of defective disks is now so simple and free of error that contrast mediums in the spine are no longer indicated and should not be tolerated. Yet pages are devoted to their useless pictures. The diagnosis of defective disks by simple x-rays is pathognomonic in 75 per cent of the cases (by narrowing of one or more disks) and yet this simple interpretation is not recognized. The causes of failure of the operative treatment of disks—concealed disks, multiple disks and the operative removal of the entire disk—are now known and have been corrected and with vastly improved results, and yet these improvements, though well known to the writers, are ignored. The consideration of fusion operations, so frequently used as an adjunct to disk removals, is argued pro and con and without decision, despite the fact that it can be dogmatically stated that there are never reasons for fusions when disks are properly treated. Finally the authors lay great stress on the assumption that defective disks are confined to the nucleus pulposus when the mere inspection of one of the large sequestrums from protruding disks shows that it is largely fibrocartilage. And when nature cures a defective disk by absorption, the entire disk is absorbed—the operator's clue to successful treatment.

Textbook of Organic Chemistry. By E. Wertheim, Professor of Organic Chemistry in the University of Arkansas, Fayetteville, Ark. Second edition. Fabrikoid Price, \$1. Pp. 867, with 113 illustrations. Philadelphia: Blakiston Company, 1945.

In the first edition the author made an admirable attempt to refer to the medical uses of various compounds throughout the book—in this edition he continues to do so. The reader must not expect detailed or elaborate discussions of medical applications of compounds; in many instances one or two sentences are considered sufficient. The general topics are presented in the manner conventional for organic chemistry. The opening section on aliphatic chemistry is followed by the section on aromatic chemistry, of which the last few chapters are devoted to quick summary reviews of subjects of more interest to the physician. The chapter on alkaloids carries a number of structural formulas; one short chapter is devoted to glycosides, enzymes, hormones and vitamins. There is even one chapter devoted to the topic chemistry of the human body, which has a short section of interest concerning the effects of the chemical groups in an organic molecule on physiologic action. Like other more recent textbooks of organic chemistry to appear on the market, two general trends are extended in this book. First, the improved format—the free use of pictures and structural formulas, and the author's style of presenting the topics—is conducive to relatively easy reading. Second, a fair share of the book is devoted to chapters concerned with the role of organic chemistry in the biologic and medical sciences. Of necessity these chapters are very brief summaries, but they are supplemented at the end of each chapter by exceptionally fine references to more detailed articles.

Bentley and Driver's Text-Book of Pharmaceutical Chemistry. Revised by John Edmund Driver, M.A., Ph.D., M.Sc. Fourth edition. Cloth Price, \$7.50. Pp. 611, with 17 illustrations. New York, London & Toronto: Oxford University Press, 1945.

This textbook is composed of sections on analytical, inorganic and organic chemistry as they pertain to pharmacy and pharmaceutical chemistry. The book would probably be of value to technicians and students of pharmacy but the procedures outlined are based largely on those of the British Pharmacopoeia. As such, the book loses a great deal of its importance to the American worker. Even at a lower price, one would expect a more substantial binding.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PRACTICE OF ORTHOPTICS BY NONMEDICALLY TRAINED PERSONS

To the Editor:—In view of the spreading tendency to practice orthoptics by unqualified operators, please express an opinion about the practice in question. Specifically, I should like to know whether orthoptics is considered a branch of medicine or not and whether anybody could practice orthoptics of his own initiative (diagnosis of phorias or tropias and relative treatments) without committing an illegal act.

Arthur A. Gallo, M.D., Farmingdale, N. Y.

[This inquiry has been referred to two prominent ophthalmologists, whose respective replies follow.—EDITOR.]

ANSWER.—Orthoptics is defined as the treatment of ocular motor anomalies by remedial exercises. The technicians, "orthoptists," who administer this treatment are not licensed by the various states. However, the Committee on Motor Anomalies of the American Committee on Optics and Visual Physiology studied the problem of attempting to regulate the training and practice of orthoptic technicians. This committee recommended that an orthoptic council be formed composed of members of the three national societies—the American Academy of Ophthalmology, the Section on Ophthalmology of the American Medical Association and the American Ophthalmological Society. The American College of Surgeons was later added. The Council has been in operation since 1938 and discourages the practice of orthoptics except under the close supervision and direction of qualified ophthalmologists. Any one who claims to be able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition and who shall either offer or undertake by any means or method to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition is practicing medicine. With this definition of the practice of medicine in mind, it is apparent that the practice of orthoptics must be considered as a part of the practice of medicine.

ANSWER.—Laws regulating the practice of medicine vary in different states. In general, stress is laid on the use of drugs, while the use of appliances such as spectacles or the use of manipulations or exercises or mental treatment or the like, which are so important a part of the practice of medicine, are deemed not to need regulation, probably because their dangers are not recognized. In some states (California, for example) diagnosis is deemed a part of the practice of medicine. Thus, a follower of Bates in Los Angeles, acting under expert legal advice, requires her patients to write down their own diagnosis. Then, as she does not use drugs and makes no diagnosis, she is, according to the law, not practicing medicine.

The problem is, on the one hand, to educate the public and the lawmakers to a better understanding of the scope of the practice of medicine and the indirect as well as the direct dangers of the practice of medicine by unqualified practitioners and, on the other hand, to include in the education of doctors of medicine a knowledge of the good features which undoubtedly underlie many of the irregular practices which arise from time to time, for example in orthoptics and allied fields of ophthalmology.

LEVELS OF EXCRETION OF HORMONES IN WOMEN

To the Editor.—Will you kindly inform me as to the changes in the gonadotropic and estrogenic hormones in the serum of pregnant women during pregnancy and following labor, and the levels of the gonadotropic and estrogenic hormones in normal nonpregnant women throughout the menstrual cycle? Have such studies been made of patients with mental derangements?

M.D., New York.

ANSWER.—Within a few days after the first missed period chorionic gonadotropins appear in the body fluids such as the urine and blood in increasing quantities, so that by two or three weeks after the first missed period there may be as much as several thousand rat units found in a twenty-four hour output of urine. This substance is found in the serum in concentrations of 2 to 10 rat units per cubic centimeter at about this time. After about sixty to ninety days there is a tremendous increase in concentration of gonadotropin, so that there may be as much as ten times the amount stated found in both urine and blood,

i. e. several hundred thousand units per twenty-four hour excretion of the urine or per liter of serum. This peak subsides and remains fairly constant at a level of from 3 to 10 thousand rat units per liter of serum or per twenty-four hour excretion of urine. Following delivery there is a disappearance from the body of the chorionic gonadotropin within four or five days, since the placenta is the site of formation.

The estrogens in the serum and urine of pregnant women increase gradually from the time of the first missed period and reach a peak before term at about 100,000 rat units excreted daily. This estrogen is in the form of estrone, estriol and estradiol, all of them being in the free state or combined with glucuronic acid. There is a change in the estrogen pattern, however, in the early months, at which time the estriol to estrogen ratio is 1 to 2 but at term 1 to 15, and also at this time there is a sudden rise in estradiol with the disappearance of the estrone. During abnormal states, such as toxemia, the relative amounts of chorionic gonadotropins and estrogens are altered with a relative increase in chorionic gonadotropins and a decrease in the estrogens. This alteration in ratio has been detected long before the symptoms of toxemia have appeared clinically (Smith, G. V., and Smith, O. W.: *J. Clin. Endocrinol.* 1:470 [June] 1941. Freed, S. G.: *Glandular Physiology and Therapy*, Chicago, A. M. A., 1941, chapter 22). The hormone excretions in the normal women are quite varied. There is, however, a fairly consistent pattern in estrogen and gonadotropin excretion. There is apparently a biphasic excretion curve of estrogen, a rise appearing at the midperiod and another before the menses, with a rapid drop at the time of flow. The actual range in values run from about 5 rat units per twenty-four hour excretion of urine to about 100 rat units if the urine is hydrolyzed so as to free the conjugated estrogens. The peak at midterm indicates, apparently, ovulation. The second pattern indicates corpus luteum activity. The gonadotropic levels in the normally menstruating woman are inconsistent and without any clearcut pattern, although there seems to be an increase in level at about the midterm coincidental with ovulation in many women. Some have formed an increase before the menstrual flow or at other times during the cycle. Usually there is an insufficient amount of gonadotropins in a twenty-four hour specimen of urine to assay biologically, and it is only at a peak that enough is present to be detected, highly concentrated urinary extracts being used for this purpose.

Assays of both estrogens and gonadotropins have been made in women with mental derangements, but a significant difference in the normally menstruating or pregnant psychopathic woman from that of the normal woman does not exist.

PENICILLIN PREPARATIONS

To the Editor.—I have been told that excellent results are obtained in syphilis using 1 cc. of Delacillin containing 300,000 units per cubic centimeter of penicillin calcium in peanut oil with beeswax. This is given intramuscularly daily until eight doses have been injected. I am skeptical of the claims made and would appreciate an opinion.

Gabriel E. Obester, M.D., Elizabeth, N. J.

To the Editor:—What is the present status of calcium-penicillin dissolved in beeswax peanut oil? A physician has informed me that several clinics have discarded its use as ineffectual because sufficient blood saturation could not be produced or maintained.

L. A. Sagnalla, M.D., Los Angeles.

To the Editor.—Is the penicillin used in oral and topical products stable? What precautions must be taken in the house of the patient in order to preserve the efficacy of the penicillin for several days?

M.D., Santiago De Chile.

ANSWER.—The use of Delacillin in the treatment of syphilis is still under investigation. The exact time and dose relationship has not been worked out in a sufficiently large number of cases to make valid any statements concerning the relative merits of this preparation in a dosage of 300,000 units per cubic centimeter for a period of eight days and the multiple injection technic with the sodium and calcium salt in isotonic solution of sodium chloride.

Penicillin suspended in beeswax and peanut oil is being used extensively; there seems to be no question that it is absorbed slowly from the muscles after injection. There has been some irregularity in the levels of penicillin observed in the blood following injection, depending on the technic of assay and the time interval for assay.

Penicillin manufactured for oral and topical use is stable within the expiration dates as published on the labels. The specifications published in *THE JOURNAL*, Aug. 18, 1945, page 1161, are those which have been set up and approved by the Food and Drug Administration of the Federal Security Agency.

TREATMENT FOLLOWING PENICILLIN FOR SYPHILIS

To the Editor:—I should like some information regarding follow-up therapy on those receiving penicillin for syphilis. Five patients with syphilis of duration greater than four years each received a total of 2,400,000 units of penicillin in sixty doses. Another patient of a duration of two years received the same amount, and an infant with congenital syphilis received 10,000 units every three hours for sixty injections. All were told to return at the end of three months for a repeat of the Wassermann test. The infant now has a negative reaction at the end of three months. At the end of the same time the patient who had the disease two years still has the same Wassermann reaction as before, 1 plus on the quantitative scale. One of those having the disease more than four years now has a Wassermann reaction of $\pm \pm \pm 000$ at the end of three months, but before the penicillin was started it was 2 plus. Two patients who had had syphilis for a duration of more than four years have remained stationary on the Wassermann report, and 1 has dropped 1 plus. The others have not yet reported for blood test. With the exception of the infant, all had received adequate treatment with arsenicals and bismuth compounds and had failed to respond with a negative Wassermann reaction. They were chosen for the penicillin therapy because of their failure to respond by the more conservative types of therapy. If the Wassermann reaction should show no reduction or be even more positive at the end of six months, what would be the procedure of choice? Should the penicillin be repeated alone or in combination with arsenicals or should one return to a yearly repetition of a course of arsenical and bismuth preparations? Would these patients be presumed to be Wassermann fast? If so, what would the procedure be then? If the Wassermann reaction should be reduced but still positive, what therapy should be instituted? If the Wassermann reaction is negative at the end of six months, what instructions about returning for periodic check-ups should be advised? One patient had a positive spinal fluid Wassermann reaction, as well as a paretic type of gold curve; if the fluid and blood should still be positive at the end of six months what course should be followed? What should be done if the fluid is negative and the blood positive?

M.D., Wisconsin.

ANSWER.—On the basis of the information given, the question seems to concern management following penicillin therapy of (1) 1 patient with infantile (early) congenital syphilis, (2) 1 patient with seropositive early latent syphilis (of two years' duration) who had received "adequate" chemotherapy prior to being given penicillin, (3) 1 patient with syphilis of the central nervous system and (4) 4 patients with seropositive late latent syphilis who had also received "adequate" standard chemotherapy prior to penicillin treatment.

1. In the infant with infantile congenital syphilis, the dosage of penicillin given could be considered to be adequate and the response of the blood serologic test normal. Subsequent medical follow-up should consist of a complete physical examination and blood serologic test every three months for the next year, with an examination of the spinal fluid once during this period. If the medical observations should remain normal, no additional treatment is indicated. If there should be any evidence of relapse, either clinical or laboratory, then treatment with double the initial dosage of penicillin could be considered.

2. There is insufficient information available as yet to be certain what can be expected from the treatment of early latent syphilis with penicillin because the initial clinical experimentation has concerned itself almost exclusively with symptomatic early and late syphilis in order to have definite clinical as well as laboratory measuring sticks to determine the effectiveness of the drug. It may be many months, or even several years, before definite procedures can be outlined for early latent syphilis. In a case like that described, a study of the spinal fluid, a complete cardiovascular evaluation and a general medical appraisal should be carried out to be certain that the persistently positive blood test is not the result of detectable activity. If it is, then strict individualization is necessary; if it is not, then, since the blood serologic titer is very low, clinical observation and a blood serologic test once every six months for the next three to five years could be carried through without additional therapy. If there should occur a persistent increase of the blood serologic reaction during this period of observation, retreatment could be considered, using either double the original dose of penicillin alone or standard arsenic and bismuth chemotherapy in addition to penicillin, or arsenic and bismuth alone, the choice being one purely of individual preference on the part of the physician.

3. The penicillin treatment of central nervous system syphilis is still much in the experimental stage, so that it is difficult to outline authoritative standard procedures. The clinical and laboratory (both blood tests and spinal fluid studies) response has been good in some cases but not in others. In general, the dosage used, namely 2.4 million Oxford units in seven and one-half days in the treatment of the case cited, would be considered to be on the low side. Many experts working in this field are now using total dosages of 8 to 10 million Oxford units of sodium penicillin in syphilis of the central nervous system. One group of workers in this field has demonstrated to their own satisfaction that maximum improvement (clinical and laboratory) following administration of penicillin in central

nervous system syphilis is reached in about four months after treatment. It is recommended, therefore, that retreatment with penicillin, when considered necessary because of failure of response to initial therapy, be given approximately 120 days after the first course. When larger dosages of penicillin are used in retreatment of such cases (4 to 8 million Oxford units) the period of treatment is likewise prolonged to not less than fifteen days. It cannot be stated at this time that penicillin has replaced other types of treatment (in particular fever therapy alone or chemotherapy in addition to fever therapy) in the treatment of central nervous system syphilis. The choice is one of individual medical preference. As in the past, in the care of patients with central nervous system syphilis a study of the spinal fluid should be repeated at six months intervals at least and the patient should remain under active medical supervision with the treatment individualized on the basis of response, rather than routinized.

4. The 4 other patients with seropositive late syphilis who have received adequate therapy with arsenic and bismuth would certainly fall in the category of Wassermann fast if each has a negative spinal fluid study and no clinical evidence of activity. Experience with penicillin treatment of such cases is likewise limited. Stokes et al. (Stokes, J. H.; Sternberg, T. H., and others: The Action of Penicillin in Late Syphilis, *THE JOURNAL*, Sept. 9, 1944, p. 73) report that, "irrespective of the system used, in all types of syphilis, penicillin causes reduction of syphilis reagin titer in the blood in from 50 to 60 per cent of late cases." Stokes and Beerman (Penicillin in Late Syphilis, *Am. J. Syph., Gonorr. & Ven. Dis.* 29:313 [May] 1945) later indicated that "in serologic fastness at moderate dosage penicillin is erratic and not notably effectual." Cases of this type are also cited in which an increase in syphilis reagin has followed penicillin therapy. This has also been observed following other modes of chemotherapy.

Accordingly there is no real evidence to date that penicillin will cause a favorable response of the blood serologic test of Wassermann fast cases when other modes of chemotherapy, adequately tried, have failed. The medical handling of this type of case in the present state of our knowledge should continue to be the same as it was before the advent of penicillin. In the absence of progression of the disease, periodic medical reappraisal (on a six to twelve months basis) to be certain that the disease is truly arrested is probably more important than are additional amounts of specific therapy.

MANAGEMENT OF EPILEPSY AND INSTITUTIONALIZATION

To the Editor:—A youth aged 22 has what appears to be psychic equivalents of epilepsy. He suddenly and without warning faints, falls to the floor, awakes shortly with a severe headache and an absent expression, and staggers aimlessly about in a sort of drunken reel until finally the attack passes and his head is clear. This recurs two or three times a day. The boy seems to have insight into his case, is of average intelligence and is anxious to make something of himself. His background is rich in psychiatric trauma. Up to the age of 17 he lived in an orphanage. Since then he has shifted for himself. For the last two years he has lived a sort of social outcast life, living unhappily in fear of attacks and embarrassment when they come. At present he seems determined to do something worth while with his life despite his attacks, yet I believe the society in which he lives would be loath to tolerate his presence. I am interested to know what society has to offer for this boy. Assuming that his attacks persist unabated, are there epileptic colonies or institutions sponsored by state or federal government where he might live and do some sort of useful work? If so, where are they located, particularly in Pennsylvania? What is the status on which patients are committed? Are they forced to go by law or are there voluntary institutions? (Irvin Cutler, M.D., Philadelphia.)

ANSWER.—The first consideration is whether the patient is receiving the best possible drug therapy. For those with psychomotor seizures this means diphenylhydantoin sodium to the limit of tolerance. Obviously, if seizures can be brought under relative control, institutionalization need not be considered. If indigent, he can be referred to the special clinic for the epileptic at the Jefferson Medical College of Philadelphia for the epileptic and social service assistance. Employment is preferable to confinement in an institution. Pennsylvania has two state colonies for the epileptic, one at Selingsgrove and the other at Oakbourne. The Passavant Colony at Rochester, Pa., is under the auspices of the Lutheran church. Patients may enter any of these voluntarily or be committed by court order. Additional information concerning the points raised may be secured from the American Epilepsy League, 50 State Street, Boston.

Popular books on the subject are:

Putnam, T. J.: *Convulsive Disorders*, Philadelphia, J. B. Lippincott & Company, 1942.
Lennert, W. G.: *Science and Seizures*, New York, Harper & Brothers, 1941.

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THE PENICILLIN TREATMENT OF SUB- ACUTE BACTERIAL ENDOCARDITIS

SOME PROBLEMS

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That subacute streptococcal bacterial endocarditis can be "cured" by penicillin therapy now seems securely established.¹ However, among the reported cases there are many in which apparent recovery—disappearance of toxic symptoms, fever and bacteremia—was soon followed by reappearance of organisms in the blood stream and resumption of a downhill course.² Large statistics obtained under uniform conditions are not yet available, but in general recurrence seems to have taken place in one fourth to one half of the treated cases. It is important therefore to inquire into the reasons for failure in the hope of improving a method which has already yielded brilliant results in an otherwise uniformly fatal disease.

THE OPTIMUM DURATION OF TREATMENT

Assuming that one is dealing with a sensitive strain, the first question is that of the optimum time-dose relationships in the administration of penicillin. Over how long a period of time should penicillin be continued and how much should be given each day and in how many doses? Is it necessary to maintain a high blood level during the entire twenty-four hours? These and other similar questions must be answered in order to map out a program which will yield the highest percentage of cures. It is noteworthy therefore that most of the reported patients have been treated for periods of only two to three weeks and rarely longer than four consecutive weeks; as just pointed out, recurrence has taken place in a considerable number of these cases. In contrast to these experiences with relatively brief therapy we have a series treated over a two months period in which very much better results have been achieved. This group, some members of which have already been reported,³ now consists of 18 consecutive

cases. Seven of these patients have been followed after completion of treatment for periods of over a year (twelve to seventeen months), the remainder for periods of three to eleven months. In no instance has there been a recurrence of symptoms of active infection or the return of a positive blood culture. One criterion for the selection of these patients was that the strain of streptococcus be sensitive to penicillin in the test tube in a dilution of at most 0.1 unit per cubic centimeter of culture medium. Furthermore, at least 160,000 to 200,000 units of penicillin was usually given in the twenty-four hours either by continuous drip or in not less than four intramuscular injections. The incidence of bacterial and clinical arrest in 100 per cent of this series is to be contrasted, as has been pointed out, with the figure of approximately 50 to 75 per cent in the more briefly treated cases reported in the literature.

It seems established therefore that, regardless of daily dose, treatment should be continued over a period of at least two months (and perhaps longer in some cases) if the highest percentage of cures is to be obtained. The proposal to treat for a shorter time and then to give more penicillin in case of a relapse does not seem sound to us, since whatever ground was gained by initial inadequate therapy may have been completely lost by the time relapse is evident. Indeed, one may actually be in a worse position since the infecting streptococci may have developed increased resistance to penicillin when subcurative doses are given.

"Pseudo-cure" from treatment not long enough continued is illustrated by the following case:

CASE 1.—A man aged 32, a sheet-metal worker who had had polyarthritis at the age of 13, was told six years ago that his heart was bad. However, he was well and at work until November 1944, when he developed chills, fever, sweats and weakness. The finger tips were sore. A blood culture was reported positive for *Streptococcus viridans* and he received penicillin for three days from an outside doctor. The temperature dropped but recurred when penicillin was stopped. Penicillin was resumed on January 22 at the rate of 120,000 units daily in divided doses. This was continued until entry to Stanford Hospital on Jan. 30, 1945. The temperature then was practically normal but he was sweating. No petechiae were seen and there was no clubbing of the fingers. The spleen was not felt. In the aortic area one heard a loud roughish systolic murmur and an echoing diastolic. The blood pressure was 140/40. Penicillin was discontinued and blood cultures were made to confirm the diagnosis. On January 30 and February 1, 2 and 3 blood cultures all yielded 2 to 3 colonies of nonhemolytic streptococci per cubic centimeter of blood. The organism was partly inhibited by 0.05 unit of penicillin per cubic centimeter of culture medium, completely by 0.1 unit. This strain was therefore not especially sensitive. Penicillin was started on January 3 (fig. 1) at the rate of 25,000 units intramuscularly every three hours except for the omission of one dose at night, a total of 175,000 units daily. This treatment was continued for thirty days, in all 5,460,000 units being administered. During this time his course was uneventful, he felt

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The penicillin was provided by the Office of Scientific Research and Development from supplies assigned by the Committee on Medical Research for clinical investigations recommended by the Committee on Chemotherapeutic and Other Agents of the National Research Council.

1. Bloomfield, Arthur L.; Armstrong, Charles D., and Kirby, William M. M.: The Treatment of Subacute Bacterial Endocarditis with Penicillin, *J. Clin. Investigation* 24: 251, 1945.

2. Dawson, M. H., and Hunter, T. H.: The Treatment of Subacute Bacterial Endocarditis with Penicillin, *J. A. M. A.* 127: 129 (Jan. 20) 1945. Meade, M.; Harris, W. H., and Finland, M.: The Treatment of Bacterial Endocarditis with Penicillin, *New England J. Med.* 232: 463, 1945. Anderson, D. G.: The Treatment of Infections with Penicillin, *ibid.* 232: 423, 1945. Spink, W. W.: Penicillin Therapy at the University of Minnesota Hospitals 1942-1944, *Ann. Int. Med.* 22: 510, 1945.

perfectly well and the rectal temperature curve showed very slight elevation, rarely above 37.5 C. (99.5 F.). During the month of treatment seven consecutive blood cultures were sterile. Penicillin was stopped on March 4, when the infection appeared to be arrested. The temperature remained practically normal, the physical signs over the heart were unchanged and the patient felt perfectly well but blood culture two days later (March 6) was again positive. A second culture on March 8

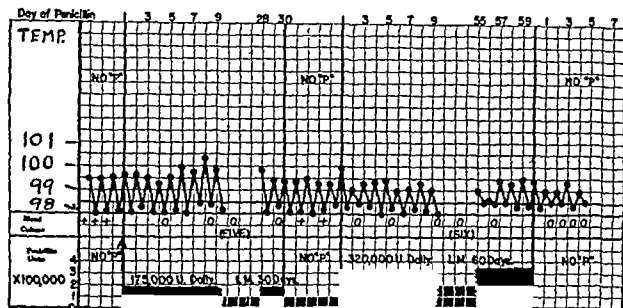


Fig 1—Course in case 1 ("P" means penicillin).

also yielded several colonies per cubic centimeter of blood. The prompt recurrence of bacteremia made it clear that the infection had not been eliminated by four weeks of treatment but merely suppressed to a point where no organisms were recovered by the relatively crude technic of blood culture.³ The strain recovered on March 6 seemed to be the same as that isolated before treatment was started and the organism showed the same in vitro sensitivity to penicillin. Inadequate treatment in this case did not lead to increased resistance. On March 5 penicillin therapy was resumed (fig. 1) at the rate of 40,000 units intramuscularly every three hours, or 320,000 units daily. This dosage was continued for sixty days. The blood again immediately became sterile and ten cultures during the treatment period yielded no growth. This time the infection appeared to be eliminated and four blood cultures made after penicillin was discontinued were all sterile. The patient left the hospital on May 11, and follow-up examination on August 21, over three months later, showed no signs of recurrence and blood culture was negative.

THE OPTIMUM DAILY DOSAGE

Our first cases were treated by continuous intravenous infusion of penicillin on the presumption that it was advisable to maintain an effective blood level at all times. Technical difficulties, however, forced a trial of intermittent intramuscular injections and it soon was evident that large doses of penicillin given every three hours were fully effective in the ordinary case with a sensitive strain of streptococcus. It was clear that regardless of theory a continuous blood level was not always necessary in practice and the question came up as to the minimum number of daily injections which would suffice for a cure. This problem has been dealt with experimentally in our laboratory by Jawetz,⁴ who finds in the case of streptococcal peritonitis in the mouse that nearly all the animals can be saved from an other-

wise fatal infection by injections of penicillin at four hour intervals provided the individual doses are sufficiently large.

A group of 4 patients were treated with intramuscular injections given only every six hours for two months. The individual dose as a rule was 50,000 units. Three of these patients are apparently well. In the fourth this plan of treatment seemed inadequate and cure was obtained after treatment was intensified. Case 2 illustrates cure of bacterial endocarditis by intramuscular injections given every six hours:

CASE 2.—A woman aged 22, a housewife, entered the hospital on Aug. 11, 1944 complaining of fever and weight loss for a month. She was said to have had a heart murmur since early childhood, but there was no definite story of rheumatic fever. A tooth was extracted in May 1944, but no symptoms developed at that time. On entry fever varied from 38 to 40 C. (100.4 to 104 F.). She was somewhat thin. There were a few scattered petechiae. The spleen was felt 3 cm. below the costal margin. There was a loud systolic murmur at the apex. There was definite anemia, but the urine was clear. Blood culture yielded 100 colonies of nonhemolytic streptococci per cubic centimeter. The strain was completely inhibited in vitro by 0.1 unit of penicillin per cubic centimeter of medium but not by 0.04 unit. Penicillin was started (fig. 2) on August 21 in a dosage of 50,000 units intramuscularly every six hours. Within forty-eight hours the patient felt much better and "toxic" symptoms disappeared. The temperature began to fall promptly and was practically normal within a week. The course from this time on was uneventful except for pain in the left side and swelling of the spleen from the eleventh to the seventeenth days of penicillin administration, probably because of splenic infarct. Blood culture taken the day after penicillin was started was sterile, and eleven subsequent cultures through October 13 were consistently negative. On August 22 she received a transfusion and from that time the blood count rose and was essentially normal on discharge. Penicillin was given at the rate of 200,000 units daily for thirty days. The dose was then dropped to 120,000 units daily given in four injections of 30,000 units. The total amount of penicillin given during the sixty days of treatment was 9,590,000 units. The temperature remained essentially normal and during the last week of her hospital stay—after penicillin had been stopped—did not go above 37.4 C., or 99.3 F. (rectal). During this period four blood cultures were sterile. During the latter part of her stay there were no embolic symptoms, nor were any petechiae seen. On discharge, October 28, the same loud systolic murmur heard on entry was still present. The tip of the spleen was just felt at the costal margin. She felt perfectly well. On follow-up visits in Decem-



Fig. 2—Course in case 2.

ber 1944 and in January and February 1945 blood cultures remained negative and she felt perfectly well.

In March 1945 she was found to be three months pregnant. Her condition was so good that it was decided to let the pregnancy continue. In August 1945 nearly at term she showed no signs of cardiac failure or of active infection, and blood culture was sterile ten months after conclusion of penicillin therapy. On August 6 she was delivered of a healthy baby without difficulty and went through an uneventful puerperium. Blood cultures were negative.

3. Interpretation of "negative" blood cultures. Failure to recover bacteria does not exclude the presence of living organisms in the vegetations or in the blood stream. Negative blood cultures may be obtained for one of the following reasons:

1. The bacteria may be so few in number that they may actually be absent from small samples of blood.
2. The bacteria may fail to grow in culture if their numbers are few or their nutritive requirements fastidious.
3. Bacteria may be filtered out in capillaries if venous blood is used for culture, although blood from antecubital veins gives colony counts only slightly lower than arterial blood (Beeson, P. B., Brannon, E. S., and Warren, J. J.: Observations on the Sites of Removal of Bacteria from the Blood in Patients with Bacterial Endocarditis, *J. Exper. Med.* 81:7, 1945).
4. If the immunity of the body is high, organisms swept into the blood stream from a valve may be promptly killed or inhibited so that growth fails.
5. The bacteria may be growing chiefly in masses of vegetation, where they are sealed off by fibrin so that bacteremia is rare.
6. With right sided lesions it may be hard to isolate bacteria from the peripheral venous blood because of filtration in the lungs.

4. Jawetz, E. Observations to be published.

Even though the strain of streptococcus was not highly sensitive to penicillin in the test tube, cure was accomplished by a scheme of treatment in which "effective" blood levels were maintained for not more than one fourth of the time. It is obvious therefore that factors other than bactericidal effect enter into the process of recovery.

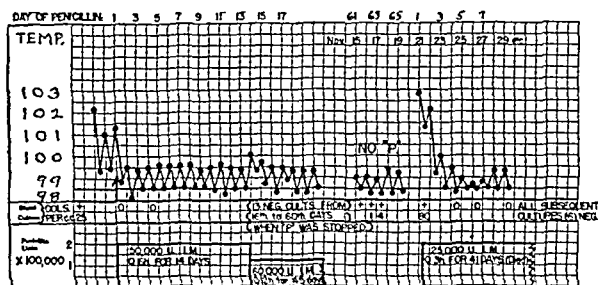


Fig. 3.—Course in case 3.

When it was found that injections given only four times in the twenty-four hours sufficed to arrest the infection in some cases, it was decided to try the effect of penicillin given at twelve hour intervals. As will be seen from the following case report, two intramuscular injections of 60,000 units each in the twenty-four hours suppressed the evidence of active infection, but positive blood cultures were immediately obtained when penicillin was stopped even though the treatment had been continued over a period of two months:

CASE 3.—A man aged 60, Greek, a tailor, had previously been well and was unaware of any heart trouble. Five weeks before entry all his teeth were extracted. He bled a great deal and was too weak to resume work. To weeks or so later he noticed fever and sweats. On entry, Sept. 15, 1944, he looked ill. He was febrile and sweaty. Some fading petechiae were seen in the conjunctivas. There was a blowing diastolic murmur in the aortic area. The spleen was not felt and there was no clubbing of the fingers. There was pronounced anemia. The urine was clear. Blood culture yielded 25 colonies of a non-hemolytic streptococcus per cubic centimeter. These organisms were completely inhibited by 0.05 unit of penicillin per cubic centimeter of culture medium, so that the strain was quite sensitive. Penicillin was started (fig. 3) on September 15 in a dosage of 50,000 units intramuscularly every six hours, or 200,000 units daily. The temperature promptly dropped to normal and the blood culture became sterile. After two weeks of this dosage it was decided to give only two injections of 60,000 units each in the twenty-four hours. During a period of forty-five days on this dosage thirteen blood cultures were all negative and except for a mild episode of fever on the twenty-eighth and thirtieth days of treatment, probably the result of pulmonary infarct, the temperature remained practically normal and the patient felt well. On the forty-fifth day of treatment he had a short bout of auricular fibrillation. When sixty days of penicillin treatments were concluded on November 14 it was believed that he was probably cured. However, blood culture November 16 was positive; culture on November 17 yielded 1 colony per cubic centimeter, November 18, 4 colonies and November 21, 80 colonies. By this time the temperature was again highly elevated and it was clear that the apparent arrest of the disease by two daily injections was actually not achieved. The strain isolated on November 18 showed no definite change in sensitivity, being partly inhibited by 0.05 unit and completely by 0.1 unit. Treatment was resumed on November 21 at the rate of 25,000 units intramuscularly every three hours, or 200,000 units daily. The temperature promptly fell to normal and blood culture on November 25 as well as all subsequent cultures was sterile. The infection again seemed to be extirpated, but the patient now had frequent bouts of auricular tachycardia, auricular fibrillation and some-

times flutter. Evidence of congestive failure developed. On December 25 he had a bout of acute left ventricular failure. X-rays showed great increase in the size of the heart since entry. On December 30 he had frank cardiac failure and on Jan. 1, 1945 he died suddenly. Autopsy was not permitted.

These 3 cases illustrate very clearly the importance of time-dose relationships in the penicillin treatment of bacterial endocarditis. It is clear that one must consider (1) the size of the individual dose and the number of doses in twenty-four hours, (2) the total twenty-four hour dosage and (3) the total duration of treatment. Even with frequent large doses cure often is not achieved if the duration of treatment is brief (one to three weeks), as pointed out in the literature.² On the other hand, even long treatment (two months) fails if the daily doses are too few or too small. At the present time then, assuming that the strain is sensitive, the best treatment seems to consist of four to eight intramuscular injections of penicillin in the twenty-four hours with a total daily dose of at least 200,000 units continued over a two months period. This scheme will doubtless be modified when proper methods for prolonging the action of penicillin are developed, but the principles brought out will be unchanged. Much further study of these time-dose relationships is obviously necessary.

STRAIN SENSITIVITY

Fortunately only a small percentage of patients with subacute bacterial endocarditis have strains of streptococcus which are "completely" resistant to penicillin, so that the organism grows freely in mediums containing large amounts of the antibiotic.⁵ In cases of this sort it has been our experience that penicillin is entirely ineffective. On the other hand the patients who respond promptly to penicillin therapy usually have strains which are inhibited in the test tube by 0.05 unit or less of penicillin per cubic centimeter of culture medium. If more penicillin than 0.1 unit per cubic centimeter is required for inhibition, the strain is regarded as not highly sensitive and "standard" treatment may be ineffective.

Failure of ordinary treatment in a case with a relatively resistant strain but ultimate cure by very large doses of penicillin is illustrated by the following report:

CASE 4.—A woman aged 48, a housewife, had been ill with chills, fever and aching for two months. Blood culture had been found positive several times for *Streptococcus viridans*. There was no story suggestive of any heart trouble in the past. There was moderate fever. No petechiae were seen. The first heart sound at the apex had a thudding quality and was followed by a soft systolic murmur. It was supposed that she had a mild congenital lesion, possibly a septal defect with bacterial implantation. There was no clubbing of the fingers and the spleen was not felt.

Blood culture on Oct. 14, 1944, before treatment was commenced, yielded 110 colonies of nonhemolytic streptococci per cubic centimeter. The sensitivity test showed that 0.2 unit of penicillin per cubic centimeter of medium was necessary for complete inhibition. This strain was therefore not highly sensitive but it seemed sufficiently on the borderline to justify treatment. Penicillin was started on October 17 (fig. 4) and continued for sixty days—from October 17 to October 25, 50,000 units every six hours intramuscularly; October 25 to November 9, 40,000 units every three hours intramuscularly; November 9 to November 16, 400,000 units daily by continuous intravenous drip; November 16 to December 16, 40,000 units every three hours intramuscularly. Under this treatment the

5. Dawson, M. H.; Hobby, G. L., and Lipman, M. O.: Penicillin Sensitivity of Strains of Nonhemolytic Streptococci Isolated from Cases of Subacute Bacterial Endocarditis, *Proc. Soc. Exper. Biol. & Med.*, 56: 101, 1944. Watson, R. F.: Sensitivity of Various Serological (Lancefield) Groups of Streptococci in Penicillin, *ibid.* 57: 65, 1944.

temperature gradually declined, although slight elevations persisted. Her general condition improved greatly and she felt quite well. It was impossible, however, with these dosages to obtain consistently negative blood cultures; for the most part they yielded 1 to 6 or 8 colonies per cubic centimeter. Subsequent sensitivity tests on three isolations showed growth to be inhibited by 0.1, 0.2 and 0.4 unit per cubic centimeter. In summary, then, this is an instance of *S. viridans* infection which we could not extirpate with "standard" intensive penicillin therapy. This failure was probably due to high resistance of the strain; not only this, but the organisms appear to have become more resistant under subcurative doses of penicillin.

The patient left the hospital on Dec. 16, 1944 and returned on Jan. 3, 1945 for further treatment (fig. 4). The temperature varied from 38.5 to 40 C. (101.3 to 104 F.). There was decided anemia with 66 per cent of hemoglobin, and blood culture January 4 yielded 115 colonies of nonhemolytic streptococci per cubic centimeter, which was not inhibited by 0.1 unit per cubic centimeter of medium. The physical signs were unchanged. It was decided to treat the patient with sulfadiazine and penicillin. Six Gm. of sulfadiazine was given daily from January 6 to February 16, when the dose was increased to 9 and then

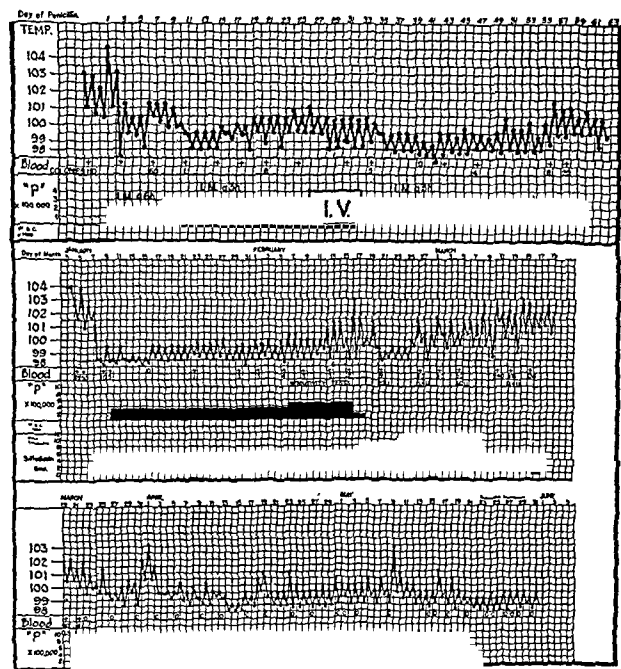


Fig. 4.—Course in case 4.

to 12 Gm. daily until March 8, when it was gradually reduced and finally stopped on March 19. Penicillin was started on January 10 at the rate of 320,000 units per day, 40,000 units intramuscularly every three hours. On February 8 this was increased to 480,000 units daily until March 16, when it was reduced for two days to 160,000 units and then stopped. Following the start of the treatment described there was a prompt fall of temperature to normal, where it remained for over a week (fig. 4). She felt much better and the blood culture showed fewer organisms (3 to 10 colonies per cubic centimeter). However, the blood stream did not become sterile, with the exception of one negative culture on January 15, and during February the temperature gradually rose in spite of continued therapy. During March it began to range as high as 39 C. (102.2 F.), and on February 26 blood culture yielded 50 colonies per cubic centimeter. To inhibit the organisms, 0.5 to 1.0 unit of penicillin per cubic centimeter of medium was now necessary.

It was clear therefore that while the aforescribed procedure was followed at first by some clinical improvement and a reduction in the degree of bacteremia, she eventually "relapsed" in spite of treatment, with return of high fever and heavy bacteremia. Furthermore the strain of streptococcus seemed to become more resistant and required 1 unit per cubic centimeter of medium for inhibition, whereas at the start 0.2 unit was

effective. However, on March 12 and 19 without further penicillin therapy the strain appeared more sensitive and required only 0.4 unit for complete inhibition (fig. 4). It is possible, however, that these findings are not significant.

It was decided to make a more vigorous assault on the disease. On March 18 the sulfadiazine, which seemed to be entirely ineffective, was finally stopped and on the 20th penicillin was resumed by continuous intramuscular drip at the rate of 1,000,000 units in the twenty-four hours. This amount of penicillin was suspended in 500 cc. of isotonic solution of sodium chloride. There were some difficulties in regulating the flow, but from March 20 to April 16 she received 24 million units by this method. From April 18 on she received 125,000 units intramuscularly in 5 cc. of saline solution every three hours, 1 million units per twenty-four hours until May 22, a total of 33,750,000 units.

As soon as the large doses (1 million units per day) were started there was prompt improvement (fig. 4). The temperature declined and she felt better. One day after treatment the count in the blood culture fell to 4 colonies per cubic centimeter and from then on 20 cultures during the course of treatment were all sterile. She was discharged on May 31 feeling perfectly well and with essentially normal temperature. During the last part of her stay a number of bad teeth were removed without ill effects. The physical signs over the heart were unchanged, but there was no evidence at all of cardiac failure.

Measurements of the level of penicillin in the blood after intramuscular injection of 125,000 units showed about 0.2 unit per cubic centimeter at the end of three hours. Hence there was an effective level most of the time.

Last follow-up three months after leaving the hospital showed that the patient was clinically well with no evidence of infection and negative blood cultures.

In summary, then, a patient with bacterial endocarditis whose strain was moderately insensitive was not cured or rendered bacteria free by rather large doses of penicillin and sulfadiazine given over a period of some three months. Indeed, after initial improvement she seemed to "escape" from the effects of the drugs and her strain was found to be more resistant than at the start. The strain seemed to become more sensitive after penicillin was stopped, and then very heavy penicillin therapy appears to have been effective in eradicating the infection.

The chart shows clearly the lowering of temperature and decrease in number of colonies in the blood stream with subcurative doses of penicillin. We believe, on the basis of the work of Beeson, Brannon and Warren, who showed the remarkable constancy of colony counts on successive blood cultures in untreated cases, that the trend of quantitative blood cultures is of great importance in evaluating the effect of therapy.

It is clear then that the sensitivity of the strain must be taken into account in planning therapy, and with strains which are more resistant than usual very large doses of penicillin may be necessary to accomplish a cure.

ALTERATIONS IN RESISTANCE OF STREPTOCOCCI UNDER TREATMENT

The possibility of bacteria of all sorts becoming resistant to penicillin by exposure to sublethal doses has been demonstrated both experimentally and in the clinic.⁶ There is good reason therefore, in theory at least, for always giving intensive therapy in bacterial endocarditis. Case 4 is a clear instance of increasing resistance of streptococci under inadequate penicillin therapy, since the strain which at first was inhibited by 0.2 unit per cubic centimeter of culture medium later grew freely in this concentration and 0.5 to 1 unit was necessary

6. Spink, W. W.; Ferris, V., and Vivino, J. J.: Antibacterial Effect of Whole Blood on Strains of Staphylococci Sensitive and Resistant to Penicillin, *Proc. Soc. Exper. Biol. & Med.* 55: 210, 1944.

completely to prevent growth. It is of interest that the resistance of this strain was higher when the dosage of penicillin was inadequate than it was after penicillin was stopped altogether. However, the change may have been within the limits of error of the method. In cases 1 and 2 subcurative doses of penicillin did not seem to lead to alteration of sensitivity of the strain.

FAILURE OF TEMPERATURE TO FALL UNDER PENICILLIN THERAPY AFTER THE BLOOD STREAM HAS BEEN STERILIZED

One of the most troublesome problems in the treatment of bacterial endocarditis has been persistence of fever for long periods even though blood cultures have become sterile under penicillin therapy. We have encountered this state of affairs in a number of our cases and the interpretation has been extremely difficult. Is persistent fever simply due to inadequate treatment? Does it indicate disintegration and absorption of large vegetations? Is it the result of some unrecognized complication? Is it caused by penicillin itself or by an impurity in the preparation? In case 9 of the series previously reported¹ the temperature did not begin to fall until the twenty-first day of treatment. The case here reported is an even more striking example of this problem:

CASE 5.—A man aged 47, who was said to have had rheumatic fever in childhood, was subject to palpitation and dyspnea for many years. Three months before examination he had a stroke with left-sided weakness, and for the past three weeks there had been chills and fever. On entry the heart was enlarged, the rhythm totally irregular. There were the signs of aortic stenosis and insufficiency and possible mitral stenosis. The spleen was palpable. Blood culture yielded a nonhemolytic streptococcus which was inhibited by 0.05 unit of penicillin per cubic centimeter. As the patient was not in cardiac failure it was decided to try penicillin. Treatment was started on Dec. 29, 1944 in doses of 50,000 units intramuscularly every six hours, or 200,000 units per day (fig. 5). Blood cultures promptly became negative, but the temperature did not subside and indeed after two weeks was higher. The dose was therefore increased on the twenty-seventh day to 30,000 units every three hours, or 240,000 units per day. However, the fever continued and on the fortieth day penicillin was stopped to make sure that fever was not caused by an odd reaction to the material. However, the temperature did not fall during a four day period without penicillin, so it was resumed and continued until the sixty-fifth day. It was not until about the fiftieth day that the temperature definitely began to fall, and at the end of the treatment period it was nearly normal. During the last week in the hospital after penicillin was stopped the temperature rose only to about 37.5 C., or 99.5 F. (rectal). On approximately the thirtieth day of treatment he developed pain in the right side and a friction rub, evidently from pulmonary infarct. This cleared up in a few days and no other complication was recognized. The explanation of the persistence of fever for such a long time is not clear. This patient was seen three weeks after discharge. He had no signs of infection or cardiac failure and the temperature was normal. Follow-up study six months after discharge shows no evidence of infection, blood cultures are negative, and temperature is normal.

In this case the prolonged fever was not explained. It did not seem to be due to reactions to penicillin, to penicillin impurities, to inflammatory complications or to persistence of active infection. The ultimate drop in temperature suggests that disintegration and absorption of masses of vegetation was going on, and under these circumstances it is possible or indeed probable that bacteria still persisted in the lesions in spite of the blood cultures being sterile. Continued fever seems, therefore, to be an indication for prolonged therapy, and the event in this case supports this position.

CARDIAC FAILURE

Every one who has discussed the use of penicillin in bacterial endocarditis has agreed that cardiac failure is in a sense a contraindication to treatment. Decompensated patients are less likely to profit by extirpation of the infection than those with good hearts, and failure may actually become worse under therapy. Case 3 illustrates the development of congestive failure during the course of penicillin therapy. On entry there was no sign whatever of cardiac failure and the heart did not seem to be enlarged. On the forty-fifth day of treatment at a time when the temperature was normal and the patient seemed to be doing very well he had a bout of transient auricular fibrillation. From this time on there were various arrhythmias and finally frank congestive failure. A few days before death cardiac enlargement, gallop rhythm, edema of the lungs and engorgement of the liver were noted. Death was clearly due to a cardiac accident.

Cardiac failure of some extent occurred in 8 of our entire series of 21 cases. In 4 frank failure, serious disturbances of rhythm or cardiac accident (coronary embolus?) were noted. In the other 4 there was no frank failure but there was a definite lowering of cardiac reserve after the conclusion of therapy.

What is the explanation of this high incidence of cardiac difficulties? First of all one may say that heart failure is less likely to occur if the initial anatomic

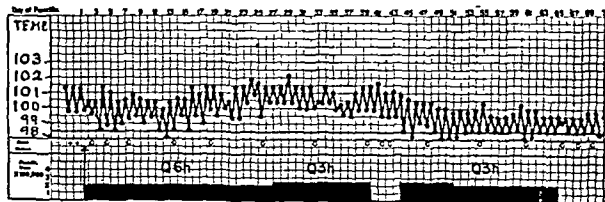


Fig. 5.—Course in case 5.

valve lesion is insignificant. But there is no absolute rule about this. C. B., for example (case 3 in the previous series¹), with an old mitral lesion apparently of slight degree, did not have any symptoms of failure before the onset of bacterial endocarditis, and the infection was promptly cured by penicillin. None the less he developed tachycardia with definite deterioration of cardiac function followed in a few months by congestive failure. Such failure is probably not due purely to the lesion which was present before the bacterial implantation. In other words there is no reason to believe that such a high percentage of patients with uncomplicated cardiac lesions would develop failure in so short a time. On the other hand it is also improbable that the mere presence of infection would induce cardiac failure so commonly even if one admits the frequency of myocardial lesions in bacterial endocarditis, as pointed out by some pathologists.⁷ We are inclined to think that the anatomic changes produced by penicillin therapy in valves the seat of vegetative endocarditis may promote cardiac failure. This view is supported by autopsy on a treated case with mitral stenosis in which the valves, while in a sense healed, were reduced to shrunken vestiges following absorption of the vegetations. In other words, one faces the paradox that elimination of infection is associated with further destruction of valves in certain cases. This conclusion of course in no way weakens the imperative indication for penicillin therapy;

7. Saphir, O.: Myocardial Lesions in Subacute Bacterial Endocarditis. *Am. J. Path.* 11: 143, 1935.

it does emphasize the importance of recognizing the active infection and starting therapy as early as possible, before valves have been extensively affected. Further experience of sufficient extent to allow statistical conclusions will be very important.

CARDIAC ARRHYTHMIAS AND ACCIDENTS

Quite aside from congestive failure, accidents and disturbances of mechanism have been very frequent. The accompanying table summarizes all the cardiac complications in our patients, and the following case illustrates more in detail the occurrence of a cardiac accident and disorders of rhythm under treatment:

CASE 6.—A man aged 27, a draftsman, had been well until about three weeks before entering. He then noticed constricting pain in the chest, fever and malaise. Blood culture was found to be positive and he was sent in for penicillin therapy. There was no definite history of rheumatic fever but a vague story of "heart trouble" years before. On examination his general condition seemed good. There was a loud, rough systolic murmur at the aortic area and over the heart in general. There was no clubbing, and no petechiae. The liver and spleen were not felt. There was high irregular fever, and second and third cultures were positive for nonhemolytic streptococci—a few colonies per cubic centimeter completely inhibited by 0.05 unit of penicillin per cubic centimeter of medium. The patient seemed the ideal case for penicillin therapy and treatment was started on March 3, 1945 at a rate of 320,000 units per day in eight doses by intramuscular injection. This treatment was continued for sixty days. Blood culture two days after the start of therapy was negative, as were eighteen subsequent blood cultures both before and after treatment. As far as elimination of infection was concerned, treatment was promptly effective. However, on the day after the start of therapy the patient had violent pain and electrocardiographic evidence of coronary occlusion (perhaps embolic from a bit of vegetation). During his course there were numerous bouts of disturbed cardiac mechanism—auricular fibrillation, flutter and extrasystoles, often with fever. Some of these bouts were thought to be due to pulmonary emboli. However, during the last few weeks of his hospital stay he was quite well (with practically normal temperature) except for a few brief paroxysms of auricular fibrillation. Electrocardiograms are shown in figure 6.

The patient seemed cured of the bacterial infection but remained a cardiac problem not because of his old valve lesion (aortic stenosis) but because of cardiac infarction and arrhythmias. He was seen frequently

Cardiac Complications During Penicillin Therapy

	Number	Per Cent
Total patients treated with penicillin	21	..
Total number with cardiac complications other than old (valve) lesions	10	47
Number showing evidence of failure before treatment was started	2	..
Number developing congestive failure during or shortly after treatment	5	{ 24% of whole series
Number developing mild impairment of function	3	..
Number developing tachycardia or arrhythmia (flutter, fibrillation and so on) during treatment	5	..
Anginal pain	1	..
Coronary embolus?	1	..
Block of coronary orifice?	1	..

after leaving the hospital, and a number of blood cultures, the last one three months after the conclusion of treatment, were all sterile. He continues, however, to have occasional bouts of cardiac arrhythmia.

In summary it seems quite clear that the patients in this series had an unexpectedly high incidence of cardiac failure and of disturbances of mechanism. Since only 2 of them showed evidence of failure before treatment was started, the question is open as to whether altera-

tions in vegetations and in valves as a result of penicillin therapy may on occasion promote these disturbances. It is noteworthy that the 2 patients who had the most serious complications had what appeared to be simple lesions of no great extent when treatment was started (cases 3 and 6).

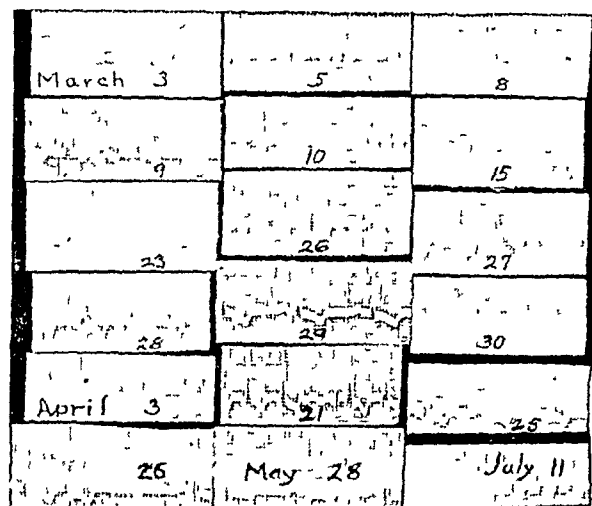


Fig. 6.—Electrocardiograms from case 6:
 March 3, lead 1, RST slightly depressed.
 March 5, lead 1.
 March 8, lead 1, changes in T waves have progressed.
 March 9, lead 1, auricular fibrillation; further change in T waves.
 March 10, lead 1, auricular fibrillation continues.
 March 15, lead 1, sinus rhythm; further changes in T waves.
 March 23, lead 1, progression of T wave changes.
 March 26, lead 1, auricular fibrillation.
 March 27, lead 2, auricular flutter, 3:1 block.
 March 28, lead 2, auricular fibrillation.
 March 29, lead 1, sinus rhythm; compare T waves with those of March 3 and 5.
 March 30, lead 3, shows very deep Q wave.
 April 3, lead 3, Q wave has disappeared and T wave has changed.
 April 21, lead 2, auricular fibrillation.
 April 25, lead 1, sinus rhythm.
 April 26, lead 1, extrasystoles.
 May 28, lead 1, further changes in RST segment.
 July 11, lead 2, auricular (or nodal) tachycardia.

COMMENT

The entire question of recovery in bacterial endocarditis has, in the past, been in a state of confusion. Thus, in the literature one encounters the designations cured, healed, bacteria free, active, inactive, recovered and intermittently active. Most of these terms express perplexity on the part of the observer as to the exact status of his patient. Libman,⁸ following Harbitz,⁹ pointed out years ago in autopsy material the frequency with which portions of the lesion seemed to be healing even as the process progressed elsewhere. Part of a valve might, for example, show flat organized or even calcified plaques, whereas not far away the lush vegetations typical of active infection would be found. In many of Libman's cases the cardiac lesions at autopsy are described as being completely healed, and it appears that usually no bacteria could be seen in sections of the valves. More recently Hamman¹⁰ has pursued the subject. Some of his patients had lesions which anatomically appeared healed and showed only fibrosis and calcification, without fresh vegetations. The striking thing, however, about the patients of Libman, Hamman and others is that the "spontaneous" healing which they describe came too late to serve any useful purpose, since the patients died of irreversible lesions of kidney, bone

8. Libman, E.: A Study of the Endocardial Lesions of Subacute Bacterial Endocarditis, *Am. J. M. Sc.* 144: 313, 1912.
 9. Harbitz, F.: Studien über Endocarditis, *Deutsche med. Wchnschr.* 25: 121, 1899.
 10. Hamman, L.: Healed Bacterial Endocarditis, *Ann. Int. Med.* 11: 175, 1937.

marrow and so on. We are confronted therefore with the paradox of a disease which always kills and yet often reveals to the pathologist a healing lesion. We conceive that penicillin therapy hastens and abets this natural tendency to healing to a degree which makes clinical recovery possible. From the nature of the case, however, considerable time is necessary for the absorption and organization of vegetations, and the cocci must be gradually "dug out of their fox-holes" and destroyed in order to prevent progressive damage. No matter how large a daily dose of penicillin is given, it seems improbable that complete healing of extensive vegetations could take place in two or even three weeks; bacteria may be killed off in the superficial parts of vegetations, but relapse would be expected as the organisms work out of the deeper layers, and indeed this is exactly what seems so often to have taken place with inadequate therapy.

This position is strongly supported by the autopsy findings in 1 of our cases (previously reported as case 2¹) apparently cured by penicillin, but ending in death later of heart failure. The anatomic findings corresponded closely with those which have been described in the cases with spontaneous healing, except that they are more complete and uniform. All the vegetations had disappeared, leaving shrunken valves with flat scarred and calcified plaques. Even so a few cocci could still be seen in sections made from the depths of the valves.

SUMMARY

The cases herewith presented show that while the treatment of subacute bacterial endocarditis with penicillin yields on the whole remarkably good results, a number of problems and difficulties still remain, among which the following are outstanding:

There appears to be a correlation between strain sensitivity in vitro and the clinical response. If the organisms require more than 0.1 unit of penicillin per cubic centimeter of medium for complete inhibition of growth the case is likely to be refractory to the amount of treatment usually given and doses up to 1 million units per day may be necessary to extirpate the infection. Sensitivity tests are essential to the intelligent treatment of these cases.

The entire matter of optimum time-dose relationships is still under investigation. The cases show that to obtain the most secure results treatment should be continued for a long period—probably at least two months—but even long continued treatment is ineffective if the daily dose of penicillin is too small and/or the number of injections too few. Subcurative therapy may produce deceptive pseudocures with disappearance of symptoms, drop in temperature and sterile blood cultures, but with return of bacteremia as soon as treatment is stopped.

Increased resistance in vitro of a strain of streptococcus from a case inadequately treated occurred. The patient was cured by large doses of penicillin (1 million units per day). The practical importance of development of refractory strains from patients with bacterial endocarditis is not yet clear. Unexplained fever may persist for a long time under treatment even though blood cultures are sterile and the patient is evidently cured.

A disturbingly high incidence of cardiac complications (aside from the original lesion) including congestive failure, mild impairment of function, arrhythmias and coronary accidents occurred in this series. The deformities and destruction of valves which seem to go hand in hand with the absorption of vegetations under penicillin therapy may account for some of these disorders.

TRANSMISSION OF POLIOMYELITIS BY PATIENT TO PATIENT CONTACT

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For some years Dr. Herman N. Bundesen, chairman of the Epidemic Committee of the National Foundation for Infantile Paralysis, Inc., has believed that a coordinated and systematic field study of the epidemiology of poliomyelitis should be undertaken by a single group of well trained persons over an extended period. The opportunity for the beginning of such a study presented itself in the summer of 1945 when a special survey of poliomyelitis was organized in Chicago.¹ A case finding program was undertaken to (a) establish, if possible, the amount of unrecognized poliomyelitis in urban communities, (b) determine the relative incidence of the paralytic and nonparalytic forms of the disease, (c) investigate contact between cases in the spread of urban poliomyelitis and relate this, if possible, to the various age groups, (d) evaluate the roles of the nose, throat, mouth and feces, if any, in the transfer of the virus from one patient to another and (e) detect the presence or absence of perennial geographic foci of the disease in the city of Chicago.

Certain observations on the incubation and infectious periods in poliomyelitis first made in Walker County, Ala., in 1941² have since been confirmed.³ These were that the infectious period in the great majority of those cases studied is three days before or three days after the onset of the prodromal period and that the incubation period (from exposure to the onset of the prodromal period) is from four to thirty-five days, averaging twelve days. A further observation made in Walker County, for which confirming evidence hitherto has not been noted, was that the transmission of the disease could be established as at least 80 per cent patient to patient contact, whether through the mechanical use of hands, mouth, nose, insect or other methods. It seemed that insects played a minor part, if any. These observations

From the laboratories of the Chicago Health Department and the Birmingham Baptist Hospitals.

1. The field work (case finding program) was supported in part, by a grant from the Cook County chapter of the National Foundation for Infantile Paralysis. This chapter, through the efforts of Dr. Morris Fishbein, agreed to contribute a portion of its local funds for this purpose. The entire facilities of the Chicago Health Department were made available, and an executive committee was appointed consisting of Dr. Herman N. Bundesen, president of the Chicago Board of Health, chairman; Dr. William I. Fishbein, epidemiologist of the Chicago Health Department, and Dr. Morris Fishbein, editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Dr. George W. McCoy, professor and director of the department of preventive medicine and public health at Louisiana State University, was appointed chairman of the advisory committee. The remainder of the advisory committee included Dr. John L. White, chief sanitary officer of the Chicago Health Department; Dr. Howard J. Shaugnessy, director of the Illinois State Bureau of Laboratories; Major Joel E. Connolly, assistant to the president of the Chicago Board of Health; Dr. Sidney O. Levinson, director of the Samuel Deutsch Serum Center of Chicago, and Dr. A. J. Hovne, superintendent of the Chicago Municipal Contagious Disease Hospital. Dr. Albert E. Casey was asked to draw up a plan for the Chicago studies similar to that used by him in Walker County, Ala., in 1941 and to map out a coordinated research plan. This plan, with some modifications made by the personnel of the Chicago Health Department, was accepted by the executive committee and approved by the advisory committee and two co-chairmen of the Cook County chapter of the National Foundation for Infantile Paralysis, Col. A. A. Sprague and Britton I. Budd.

2. Casey, Albert E. Observations on an Epidemic of Poliomyelitis, Science 95: 359-360 (April 3) 1942; The Incubation Period in Epidemic Poliomyelitis, J. A. M. A. 120: 805-807 (Nov. 14) 1942; Place of Contact and Radial Spread of Epidemic Poliomyelitis, Am. J. Dis. Child. 69: 152-156 (March) 1945.

3. Aycock, W. L.: Personal communication to the authors. Krause.⁴

on patient to patient contact were made in a rural area during a severe epidemic (Alabama, on the basis of case reports, was the most intensively affected state in the Union in 1941 and Walker County the area of highest concentration of reported cases) and would indicate that the disease is highly contagious. Chicago in 1945 presented an unusual opportunity to test the same methodology in the study of the disease in a large urban community during a nonepidemic year.⁴

This paper, therefore, reports investigations of patient to patient contact and observations on the incidence of usually unrecognized cases of poliomyelitis of various types. Because more weight is likely to be given to investigations in neighborhoods where paralytic poliomyelitis was present, this report is limited to three patient neighborhoods wherein resided 7 patients with paralytic poliomyelitis (and their respective control neighborhoods).

MATERIALS AND METHODS

When a case or suspected case of poliomyelitis was reported to the Chicago Health Department, a history was immediately taken and a physical examination made by the pediatrician experienced in the diagnosis of poliomyelitis, who participated in the study. If positive or suggestive of poliomyelitis, the patient was transferred to the Municipal Contagious Disease Hospital or to a private hospital properly equipped to handle poliomyelitis, where spinal puncture and confirming examinations could be made without jeopardy to the patient. When the diagnosis was confirmed, a neighborhood investigation was undertaken by the staff of trained investigators to determine if any other cases were present in the neighborhood; if any were found, they were included in this study. The patient's neighborhood was defined as that block or area within one block radius of where the patient resided during the infectious period. A census was taken of all persons under 25 years of age in the neighborhoods studied, and the chronology and symptomatology of all illnesses from June 15 (when the study was started) to date were noted on each person in that age group. A casual but not detailed inquiry as to febrile illnesses prior to June 15 was obtained, and a casual survey of the neighborhood and premises as to the disposal of feces, the water supply, sewerage, garbage disposal, flies and other insects was made, but nothing unusual was found.

When a case of poliomyelitis was present in a neighborhood, careful, detailed checked and rechecked histories of the playing habits, visits and housing of all persons under 25 years of age were compiled, especially with reference to the period three days before and three days after the onset of the prodromal period in the patient and in other persons in the neighborhood who had illnesses compatible with poliomyelitis. Although most of the children in a block had been with one another at some time after June 15 in the neighborhoods studied, only a portion of these, as far as could be ascertained, had associated with the patient during the period described and defined in this study as the infectious period.

Those persons who were closely or intimately associated in play or otherwise with the patient for a total period of more than ten minutes during the infectious period were defined as contacts in this study. Those

persons living in the same or adjoining blocks who were not associated for this length of time with the patient during his infectious period or with any other person with an illness seemingly compatible with poliomyelitis during his infectious period were defined as noncontacts (even though these persons may have played with the patient at some prior or subsequent period). Most of the noncontacts were children on the street across the alley from the patient, or in a block distant or across the street from the patient, although in some instances there was no evidence that even next door neighbors associated with the patient during the infectious period. Evidence on these points of association was obtained from the children themselves rather than relying principally on the statements of the adult population. The chronology was checked and rechecked for accuracy.

As an epidemiologic control, a collateral investigation was made in a neighborhood ten or fifty blocks distant from the patient's residence, depending on the location in the city, where there were no known cases of poliomyelitis. In all but one instance these control areas were at least one-half mile away from any known case of poliomyelitis. The distances were rotated north, south, east and west so that equal numbers of controls were located in the four parts of the city. The same census of persons under 25 years of age, the same investigation as to illnesses and visits, playing habits and sanitary conditions was made as in the poliomyelitis patient's neighborhood. Minute details of the minor illnesses were obtained and checked by the field epidemiologist (and by the pediatrician as indicated). Persons under 25 years studied in these control neighborhoods were designated in this study as controls.

Daily temperatures, nose, mouth and throat swabs and daily stool specimens were obtained from 6 persons in each neighborhood where there was a case of poliomyelitis and in each control neighborhood. These persons were generally those who had had a history of no prior illness since June 15. In the patient's neighborhood, 4 or 5 of the 6 were usually contacts and 1 or 2 noncontacts. Also 4 of the 6 were usually between 1½ and 9½ years of age, 1 between 10 and 15 and 1 between 15 and 24. The children selected as contacts were those most closely in contact with the patient when such children could be enlisted in the study. The purpose of this procedure was to attempt to have stool, throat, mouth and nose specimens on children who subsequently came down with clinical or subclinical poliomyelitis. In this way it was hoped to obtain information on the presence of the virus in the body during the late incubation period. To carry out this phase of the study it was necessary to have the disease reported to the epidemiologist promptly, so that the intimate contacts of the patient and a set of controls could be enlisted in the study within six days after the onset of the prodromal period in the patient.

Often it was discovered that the case first reported was not the first case of poliomyelitis in the neighborhood. When a good history of a febrile illness compatible with poliomyelitis was obtained on a prior or subsequent contact, noncontact or control, the child was sent to the hospital when feasible and a spinal fluid examination made to aid in diagnosis. This was done in most of the children among the contacts, noncontacts and controls on whom daily thermometer readings were made and a temperature of 99.2 F. axillary on one day or 99 F. or more on several days was recorded.

⁴ The total number of cases of poliomyelitis in Chicago during 1945, up to November 18, was 233, with 19 deaths. Of these, 230 were hospitalized. In 1943 there were 998 cases and 87 deaths.

RESULTS

Many febrile illnesses, such as measles, mumps, pertussis, coryza, diarrhea, otitis media, vaccine reactions and other illnesses, were detected throughout the city, all in the neighborhoods studied during the summer and early fall. There was evidence that 2 cases of mumps and 1 of measles encephalitis were reported as poliomyelitis during the early phases of our study, but, of course, these are not included in the study. It is of interest to note that in 1 case of mumps encephalitis there was no evidence of parotitis or other local manifestation. This case may be made the subject of a separate report. None of these 3 cases presented paralytic poliomyelitis and it strengthened our decision to include in the study only the neighborhoods in which a paralytic case of poliomyelitis occurred. There was also found, as had been the experience in Walker County, Ala., an enormous variation in the abilities of nurses and physicians in history taking and the necessary detective work essential to establish the chronology or visits and illnesses in the child population. This first paper is limited to a report of those neighborhoods which were investigated and reinvestigated and had additional checks and rechecks by the most experienced and able of the personnel. There are, undoubtedly, uncontrollable errors, particularly of omission in the histories reported, but it is believed that the painstaking work has yielded a body of data of more accuracy than that often reported on experimental animals in laboratories, and better than the usual histories obtained under optimal conditions in some hospitals. In the meantime, a group of trained workers has obtained invaluable experience for further work in the future.

Since the animal inoculations will take considerable time, no report can be made for some time on the many specimens taken from nose, throat, mouth and stool which were collected during the incubation period in patients with febrile illnesses. Several of these were outright clinical cases of poliomyelitis with paralysis. The results of the daily temperature readings are not reported as such here, since this also will be the subject of another report. Suffice it to say that about 60 persons with febrile illness compatible with poliomyelitis were found in the day by day neighborhood studies.

Although investigations were made in the neighborhoods of 7 paralytic cases of poliomyelitis and 9 nonparalytic cases, presumably poliomyelitis, this preliminary report concerns only three patient neighborhoods wherein resided 7 paralytic patients and their respective control neighborhoods, because there has not been sufficient time to tabulate and study all of the data collected. However, we feel that the information is of sufficient importance to justify this preliminary report. Even here the date of reporting in the first case (also first of the 26 reported) was so close to the beginning of our study that much effort for a week or two was made in the training of nursing personnel in the collection of specimens and the taking of temperatures. From the fact that 3 of the paralytic cases were from one family, and 2 of the 4 other paralytic cases were from one side of the same block, it would seem that paralytic cases were more likely to occur in the neighborhood of another paralytic case than in the neighborhood of a nonparalytic case.

The data as to contacts, noncontacts and controls are presented for the neighborhoods of the 2 older patients not completely studied (table 1)⁵ and for the

Shaw and Yates avenue groups (tables 2 and 3). Data are available on the age, sex, color, onset of illness, presence of fever, headache, stiff neck or stiff back, sore throat, constipation, vomiting, paralysis or paresis, running nose, cough and diarrhea, together with the spinal fluid cells.

Cases in which these symptoms occurred together with spinal fluid protein of 45 mg. or more (indicative of poliomyelitis), or those with fever, headache, stiff neck or back and paresis or paralysis are listed as poliomyelitis and placed in group A. There were 24 children in this group with fever, 23 had spinal fluid examinations made and 22 had spinal fluid proteins of over 45 mg., indicative of poliomyelitis. The other child had a bloody tap, which made the fluid unfit for study, and in 1 person spinal tap was not permitted. The febrile illnesses studied were not colds. None of these 24 patients (group A) had a cough; 1 had running nose, and 2 had a slight diarrhea.

In classifying the remaining 266 children studied (including contacts, noncontacts and controls), those children without paralysis or paresis, that is, muscular weakness, who demonstrated either running nose, cough or diarrhea were eliminated from a second group of

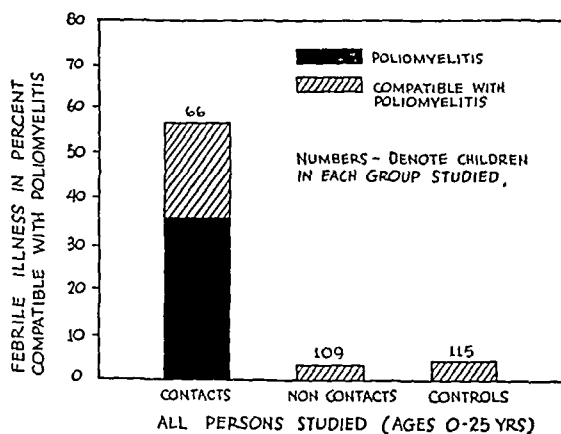


Chart 1—Incidence of illness among contacts, noncontacts and controls

children having illness compatible with poliomyelitis and were placed in group B. Into group C were placed children with mumps, pertussis, otitis media, vaccine reactions and indefinite illnesses accompanied by running nose, diarrhea or cough.

There were 224 children who were noncontacts and controls. No case of definite poliomyelitis developed among any of these noncontacts or among the controls (table 4). There were four minor illnesses of the subclinical variety considered compatible with poliomyelitis but not diagnosed as such. There was no difference, as far as incidence of poliomyelitis or febrile illnesses compatible with poliomyelitis is concerned, between the children in the same block as the patient who were noncontacts and the control children who lived ten to fifty blocks distant (chart 1). Yet the noncontact children in the same block as the poliomyelitis cases were exposed to the same flies or other insects, water, milk and other food supplies as the patients and contacts. On the other hand, in addition to the 24 cases of poliomyelitis among the 66 contacts, 13 children, or 20 per cent of the contacts to poliomyelitis cases, developed febrile illnesses which, although not definitely clinical poliomyelitis, were compatible with this disease (chi square = 87.3; $N = 1$; $P = 0.001$ —, significant). These differences were true for

⁵ Tables are included in reprints, which will be sent on request.

each of the three neighborhood groups studied both as to the incidence of frank poliomyelitis and as to the incidence of minor illnesses compatible with poliomyelitis (table 4).

When the incidence of febrile illness compatible with poliomyelitis and the cases of definite poliomyelitis in contacts, noncontacts and controls were plotted according to age groups, no peak occurred among the noncontacts and controls, whereas there was a sharp peak among the contacts, reaching 90 per cent in the $1\frac{1}{2}$ to $3\frac{1}{2}$ age groups, tapering off with the older groups (tables 4 and 5, chart 2). No poliomyelitis or illness compatible with poliomyelitis was recognized in any child under $1\frac{1}{2}$ years of age whom we studied.

COMMENT

The incidence of febrile illnesses compatible with poliomyelitis among contacts in the $1\frac{1}{2}$ to $3\frac{1}{2}$ age group is about the same as that observed in Walker County, Ala., in the epidemic of 1941. However, the tapering off of the curve was less definite in the Chicago area than was noted in Alabama. This might indicate that the children in Walker County, Ala., were more

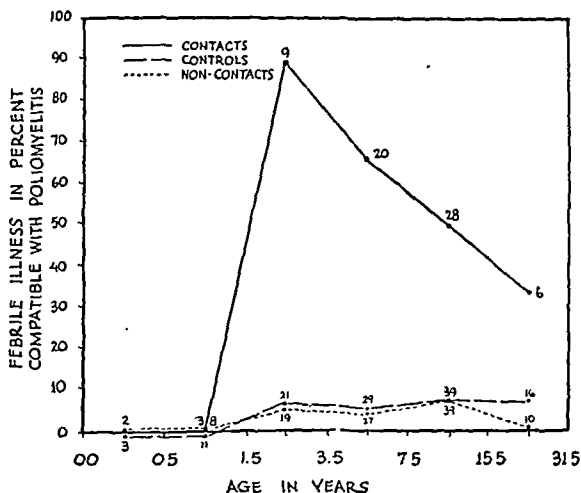


Chart 2.—Illness according to age groups.

commonly exposed to infantile paralysis in the younger age groups than was the case in Chicago or that more detailed studies of indefinite illnesses in the older children were employed in Chicago, bringing more cases of poliomyelitis to light.

The apparent contagiousness of poliomyelitis in an epidemic year in a rural community compared with a nonepidemic year in a large modern city would seem to demonstrate that poliomyelitis is a very contagious disease among young children. Presumably the older children may have actually had the disease or may have developed an immunity in some other way.

It should be pointed out that of the 24 children diagnosed as having poliomyelitis and having spinal fluid findings, such as elevated protein, sufficient to confirm a profound reaction in the central nervous system, 7 were paralytic. If to these 24 are added the 13 other children living in the same block, exposed to poliomyelitis and developing a minor illness compatible with poliomyelitis, 1 child in 6 who develops poliomyelitis may be expected to have paralysis. Fourteen of the 37 (38 per cent) developed stiff neck or stiff back recognized by history or physical examination after an intensive study.

Until some method of diagnosis, such as a serologic or other inexpensive laboratory test, is available, perhaps it would be well to make a definite diagnosis of poliomyelitis in those children with no paralysis only if they have fever, spinal fluid protein over 45 mg. and were contacts living within a block of a paralytic case of poliomyelitis. This might obviate the mistaken diagnosis of poliomyelitis in other virus diseases, such as mumps, which may closely simulate poliomyelitis. In addition, it would help lead to a diagnosis in most of the 62 per cent of subclinical cases of poliomyelitis not now recognized or reported as such. Since many of those listed as minor illnesses compatible with poliomyelitis were children without spinal fluid protein determinations, and since in another publication it will be reported that the spinal fluid protein is high in these children with minor illnesses, compatible with poliomyelitis, three to six weeks after the onset of illness, spinal fluid examinations could be more widely used in clinical practice by hospitalizing suspects in a hospital where the tests can be adequately performed.

The possibility that the daily visits by our nursing personnel may have introduced the virus can be dispelled by studying the dates of onset (tables 1, 2 and 3). At the time our studies were instituted, 24 of the 37 children had already developed their febrile illness and all who were going to come down with the disease had already been exposed. It is possible that the intensive study actually limited the spread, and there is no evidence to support the presumption that a single case in the groups herein reported was brought in by the medical personnel. Needless to say, unusually strict and careful technics were employed. These will be more fully explained under the virus studies now in progress, and it should be pointed out that stool, nose, throat and mouth specimens are available on nearly all of the children herein reported.

This study throws some light on the possible role of insects as against human contact in the spread of poliomyelitis. It is believed that these studies point to which of these two is the major role involved once the virus is introduced into the neighborhood. Of the noncontacts living in the same block as the patients, none developed poliomyelitis and there were no more minor illnesses compatible with poliomyelitis than were found in the control neighborhoods ten and fifty blocks distant. On the other hand, 20 per cent of the contacts developed the disease. The studies would indicate that poliomyelitis for children $1\frac{1}{2}$ to $3\frac{1}{2}$ years of age is as contagious as measles, mumps or other better known contagious diseases. There were flies of the orange and green variety seen about garbage cans in the alleys of Chicago during the summer of 1945, but there was no significant difference between the presence of these flies in poliomyelitis neighborhoods and in the control neighborhoods where the disease did not appear. In fact, the two neighborhoods where most of the patients with poliomyelitis in this study resided were almost entirely free from flies and had cement garbage disposal boxes and the latest fecal disposal systems and sewerage. Again it would attribute too much intelligence to the fly and other insects to select in a given block only those children who had been in contact with the patient during the infectious period, to transmit the disease, and intelligently avoid those children in the same block who had not been in contact with the patients. Such an assumption would seem to carry insect intelligence too far.

The following case histories indicate the relationship of various cases of poliomyelitis to one another:

In the Shaw neighborhoods a boy aged 9½ years (TARoIsa, table 2) attended a summer camp in Wisconsin in the last week of June, returned home on July 8, became ill on July 15 at his home, and there exposed on that day his 10 year old first cousin (TAPaSha, table 2) who played with him that day but who was not with him before or after or within 3 miles of him during the rest of the summer. The ten year old cousin went back home to her neighborhood and became ill eight days later. Four and five days after her onset and seven and eight days after exposure to her during her assumed infectious period her 2 sisters (TAKaSha and TAJeSha) became ill. Playmates of the 2 sisters (TACHOrr and TADoNei) became ill with poliomyelitis twelve and thirteen days later. On the day that her 2 sisters were becoming ill (July 27) a younger brother, William (TAWiSha), aged 7 years, and a young nephew, Leonard (TALeLaf) 1½ years, who had spent the entire summer before and after this time with the grandparents in a still different part of Chicago, visited the Shaw home on July 27 when the 2 sisters were in their most infectious period and played with these 2 for a period of hours, hugging and kissing them. Nine days later William and ten days later Leonard became ill with poliomyelitis, William being paralytic and Leonard having an illness detectable only by daily temperature thermometer readings and a spinal fluid examination.

Similar relationships existed in the other neighborhood intensively studied, in which the first child (TADiKaw), aged 7 years, became ill on July 22, and 6 of her contacts became ill between August 1 and 6, which was ten to fifteen days later. Children exposed to these contacts became ill eleven to seventeen days later.

Making the most of fragmentary or indirect evidence, many workers had been successful in approximating the incubation⁶ and the infectious⁷ periods in poliomyelitis and had concluded that the disease was contagious.⁸ However, it was not until the fortuitous occurrence of an intense rural epidemic that sufficient direct evidence could be compiled.² These observations were quickly confirmed as to the incubation and infectious periods,⁹ but the 80 per cent patient to patient contact rate noted in Alabama has not been duplicated except in the Chicago studies here reported. In fact, studies generally have not shown a patient to patient contact rate in poliomyelitis of more than 15 to 30 per cent.¹⁰ The difference lies perhaps in the painstaking detective work on and the carefully prepared histories of minor illnesses not hitherto catalogued as poliomyelitis but most of which in the present studies were checked by either daily thermometer readings or retrospective spinal fluid examinations or both. There was almost no necessity to assume, in either Walker County or Chicago, that poliomyelitis had been transmitted through persons not clinically ill with the disease.

SUMMARY

Among 66 persons in contact with poliomyelitis cases during the infectious period, 37 developed illnesses within six to fifteen days afterward which were compatible with poliomyelitis, and 24 were definitely diagnosed as poliomyelitis. Among 109 other children of the same age, who resided within the one block of the patient but who had not been in contact with the patients during the infectious periods, 4 developed illnesses compatible with poliomyelitis and not one was a clinical case.

Among 115 children in control neighborhoods of the same age as the contacts and noncontacts but who lived ten and fifty blocks distant from the poliomyelitis neighborhood and who were apparently without contact with a clinical case, 5 developed illnesses compatible with poliomyelitis and not one was a clinical case. There was no statistically significant difference between the noncontacts and the controls in this respect, but a highly significant difference between these two groups and the contact group.

CONCLUSIONS

1. Multiple cases of poliomyelitis in the family were the rule rather than the exception when there were other children from 1½ to 8½ years of age in the home.

2. Poliomyelitis was found to be contagious perhaps to the degree of 90 per cent in the 1½ to 3½ age group but less infectious in the older groups.

3. There was no evidence that flies and other insects played a major role in the spread of the disease in the neighborhoods studied, once the disease had been introduced.

4. Only about 1½ out of 6 instances of poliomyelitis would have been diagnosed as such, even under an alert public health reporting system, without an intensive neighborhood study. Illness in the other cases of poliomyelitis was so mild in most instances that a physician was not consulted.

5. Paralysis developed in about 1 case in 6, and about 2 in 6 could be confirmed only by animal inoculations or by spinal fluid protein examination done two to seven weeks after onset.

6. Poliomyelitis in the cases studied was usually a very mild condition, but in every instance there was sufficient systemic disturbance to account for a thorough immunization. Even in the mildest cases the spinal fluid protein was elevated above 45 mg. two to six weeks after onset.

7. Earlier observations by Casey, Aycock, Kessel and Gordon on the infectious and incubation periods are confirmed, and the original high percentage of patient to patient contacts noted in a rural epidemic have been substantiated by finding the same conditions in a large urban area like Chicago in a nonepidemic year.

8. Present methods and criteria for the diagnosis of the disease must be revised.

Virus Survival.—Control of virus disease in the future, as in the present, must depend wholly on an accurate understanding both of the mode by which the virus survives and of the process by which symptomatic disease is produced. When such knowledge is available, it is usually possible to see either that effective action can be taken at some point in the life history of the virus to eliminate the chance of human infection or that the virus cannot be dealt with in this fashion. In the latter case, the aim changes to that of preventing symptomatic infection after the virus has entered the body either by ensuring an immunological resistance through artificial immunization carried out before exposure to the virus or by other means still to be devised.—Burnet, Frank MacFarlane: *Virus as Organism*, Cambridge, Mass., Harvard University Press, 1945.

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TREATMENT OF PREPARALYTIC POLIOMYELITIS WITH GAMMA GLOBULIN¹

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By July of 1944 it was obvious that New York State was about to experience a major epidemic of poliomyelitis. Dr. John B. Alsever of the U. S. Public Health Service, temporarily assigned to the New York State Health Department in connection with the development of its plasma program, saw in the situation an excellent opportunity to study the possible therapeutic effect of the gamma globulin fraction of pooled plasma¹ in poliomyelitis. At that time collaborators of Enders² had already reported finding poliomyelitis antibodies in fraction II + III of human plasma in concentrations ten times as great as in whole plasma. Moreover, it was found that a number of other antibodies, similarly concentrated four to ten fold in fraction II + III, were associated with the gamma globulins, since they were further concentrated³ fifteen to thirty fold over plasma in fraction II,¹ which contains 80 to 95 per cent gamma globulin in different commercial preparations.³ It seemed reasonable to assume, therefore, that the concentration of poliomyelitis antibodies would be appreciably greater in fraction II alone, from which commercial gamma globulin is prepared. This assumption has been borne out by an extensive and painstaking series of titrations by S. D. Kramer.⁴ These experiments, as yet unpublished, indicate that neutralizing antibodies against the Lansing strain of poliomyelitis virus are present in fraction II at an average concentration eighteen to twenty-five times as high as in the corresponding whole plasma.

The present work basically constituted a repetition of the convalescent serum studies, and from the reports of the three recorded studies of this sort in which establishment of a control series of cases was attempted⁵ there seemed little reason to be hopeful. However, with the much larger dosage of antibody theoretically available in a given volume of gamma globulin it was conceivable that a favorable result might be obtained. The question clearly needed to be investigated and the situation for doing so looked very promising. Accordingly a plan to study the therapeutic effect of gamma globulin in poliomyelitis, with a request for allotment of sufficient material, was submitted to the Technical Advisory Com-

mittee of the American Red Cross, which at that time controlled the national gamma globulin supply.

This committee approved the study as outlined and agreed to release enough material to carry it to a significant conclusion. Its approval had but two provisos—that, contrary to the plan as submitted, only preparalytic cases be included in the study, and that we be advised throughout by a special committee consisting of Drs Edwards A. Park, Charles A. Janeway and Ernest L. Stebbins.⁶

The two major foci in the epidemic were in the Elmira and Buffalo areas, and it was decided to confine the study to two hospitals in each of these regions. There are only two hospitals in Elmira, the Arnot-Ogden and St. Joseph's, and essentially all patients of any age with poliomyelitis were being cared for in them by the two licentiate pediatricians in the city. Of the several hospitals in Buffalo, the two chosen were Children's, because it was bearing the brunt of the epidemic for the city as a whole, and Meyer Memorial, because it was receiving a fair number of adult patients. The project was presented to the various staff physicians concerned at each hospital, and all expressed themselves as willing to cooperate to the fullest extent.

As has already been noted, the idea was conceived in July, and all the necessary groundwork had been laid early in August. Because of complexities of production, however, the pharmaceutical company which was assigned the order for the gamma globulin was unable to fill it immediately, so that the material was not received until August 20. Consequently the study was not launched until August 22 in Buffalo and August 23 in Elmira.

All the staff men concerned gave their assurance that it would be feasible to enroll every preparalytic case in the study strictly according to plan regardless of whether they happened to be private or service cases, and in actual practice there was only one exception. In Elmira a nurse who had been working in the poliomyelitis wards and had seen the injections developed the disease and should have been in the treated group, but she refused to have the treatment and so had to be interchanged with a 4 year old girl who came in five hours later. All other cases were enrolled alternately without exception as treated and controls in the order of their admission to each individual hospital. The field team checked on every poliomyelitis admission and reviewed the hospital charts regularly for the clinical condition at the time of admission. These records show that every case which was unquestionably preparalytic poliomyelitis according to the stipulated criteria was included in the study.

The criteria for preparalytic poliomyelitis were established by the special advisory committee and were twofold: (1) the cerebrospinal fluid of the patient was required to contain more than 10 cells per cubic millimeter and (2) there could be no definite weakness of any major muscle group and no evidence of facial, pharyngeal or respiratory involvement in a patient who otherwise presented a clinical syndrome indicative of poliomyelitis. Every one concerned, including the committee, felt that the stipulation of a minimal spinal fluid cell count of 11 was regrettably arbitrary, but it was agreed on as necessary to substantiate the diagnosis and

From the Division of Communicable Diseases, New York State Department of Health

This study would not have been possible without the cooperation of a host of collaborators, whose names are listed in the reprints

Gamma globulin is the name used to achieve brevity in describing concentrated normal human serum gamma globulin (immune serum globulin) prepared by the method of Cohn, Oncley, Strong, Hughes and Armstrong² from blood collected by the American Red Cross

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4. Dr. S. D. Kramer is associate director, Bureau of Laboratories, Division of Virology, Michigan State Department of Health

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6. Dr. Edwards A. Park, chairman, is professor of pediatrics, Johns Hopkins University School of Medicine, and pediatrician in chief, Johns Hopkins Hospital. Dr. Charles A. Janeway is assistant professor of pediatrics, Harvard Medical School, visiting physician, Children's Hospital, Boston, and associate in medicine, Peter Bent Brigham Hospital. Dr. Ernest L. Stebbins is commissioner, New York City Department of Health

prevent the otherwise inevitable subsequent criticism that probably some cases that were not poliomyelitis had been included. Actually the typical paralytic disease developed later in a number of cases excluded from the study because of cell counts under 11.

Each patient was seen on admission by one of the resident or attending physicians, and if there was no

TABLE 1.—Gamma Globulin Dosage Schedule and Estimated Equivalents in Whole Plasma*

Buffalo and Elmira 1944

	Gamma Globulin	Whole Plasma
Under 1 year of age.....	20 cc.	360 - 500 cc.
1 year of age.....	30 cc.	540 - 750 cc.
2 years of age.....	40 cc.	720 - 1,000 cc.
3 years of age.....	50 cc.	900 - 1,250 cc.
4 years of age.....	60 cc.	1,080 - 1,500 cc.
5-7 years of age.....	70 cc.	1,260 - 1,750 cc.
8-11 years of age.....	80 cc.	1,440 - 2,000 cc.
12 years and over.....	100 cc.	1,800 - 2,500 cc.

* Based on titrations of antibodies against the Lansing stain of poliomyelitis by Dr. S. D. Kramer.

clinical evidence of paralysis the case was referred for a detailed muscle grading. This was done promptly by a specially assigned registered physical therapist on twenty-four hour call, who was required to commit herself immediately on the completion of her examination as to whether she thought there was any definite weakness of a major muscle group. If she found none, and if the total cell count of the cerebrospinal fluid which had been examined meanwhile was over 10, the case was considered suitable for inclusion in the study.

Patients due to be treated received gamma globulin intramuscularly in accordance with the dosage schedule presented in table 1. It was felt that it was probably important to give the total dose as soon as possible. For that reason it was stipulated that each patient receive his full quota all at once, and that condition was met in every case. The dosage schedule was prescribed by the special advisory committee and was made as large as they thought could be tolerated by an intramuscular route. An age scale was employed rather than a presumably more accurate one based on body weight because of the practical difficulty of obtaining those weights by hospital staffs already harassed almost beyond endurance. It was suggested that the full dose be divided preferably into not more than four portions injected into the anterior thigh muscles and buttocks. In no case were more than four sites required and actually many of the patients were able to take the dose in two or three portions.

Patients that fell into the control group were followed exactly as the treated ones, but they received no injections. The original plan was to give the controls normal serum or isotonic solution of sodium chloride. The special advisory committee decided against this plan and in favor of no injections because it felt that a better control would be obtained by the latter method and it questioned the importance of the psychologic aspects of control injections. The clinicians in charge of the cases were sure that omission of control injections would not lead to any selection of cases; accordingly uninjected controls were used.

One week after admission, again one week after that, and finally five to seven months from onset the muscle gradings were repeated on all patients, always by the same physical therapist who had made the initial grading. Three physical therapists were employed in all, one at Children's Hospital where the great majority of the

data were obtained, another at Meyer Memorial Hospital and the third at the two Elmira hospitals. All three of these technicians are highly skilled, all follow essentially the same method of muscle examination and all used the same form to record their results. This form, which is the one currently used for muscle grading by the Medical Rehabilitation Division of the New York State Health Department, lists fifty-three individual muscles or functionally related groups. All fifty-three were checked each time except in a few patients who were too sensitive to grade on the second or third gradings. The condition of each muscle or group was evaluated as normal, good, fair, poor, trace of power or totally paralyzed.

It would have been ideal if the physical therapists could have been kept in complete ignorance as to which patients were treated and which were controls, but this possibility was lost when it was decided not to use a control injection. An earnest effort was made at the very outset, however, to inculcate them deeply with the idea that the value of the agent under investigation was entirely unknown, that there was no more reason to anticipate a favorable effect than a negative one, and that it was positively essential, if the efforts of every one were not to be wasted, that unbiased data be obtained. They were cautioned, moreover, not to attempt to refresh their memories if they should forget from one examination to the next which patients were treated. They kept the grading forms with them until the study was completed, so that it was not necessary for them to refer to the hospital charts to make their entries, and they had no access to our special case cards with a detailed record of treatment. As a result of all this—and this is particularly true in the case of the one technician who had 89 of the patients—the physical therapists were not aware for the most part which patients received treatment and which did not.

TABLE 2.—Criteria of Comparability

Buffalo 1944

Criterion	Number of Patients	
	Treated	Controls
Total	49	45
Month of onset:		
August	25	24
September	20	21
October	4	3
Male	34	30
Under 5 years of age.....	4	7
5-9 years of age.....	15	15
10-14 years of age.....	15	16
15 years and over.....	9	7
Interval from onset to hospital admission:		
1 day or less.....	13	12
2-4 days	17	17
5-7 days	13	13
8 days and over.....	6	6
Cerebrospinal fluid total cell count:		
10-49	19	17
50-99	11	10
100-199	12	14
200 and over.....	6	7
Received hot packs	47	43

The study was begun, as already stated, on August 22 in Buffalo and on the 23d in Elmira. It was not continued for a comparable interval in all four hospitals, however. By September 13 the admission rate had fallen so low at Meyer Memorial Hospital that the returns were not sufficient to justify the expenditures involved, so that no patients were enrolled in the study in that hospital after that date. By September 25 the same situation had developed in Elmira, and further

expansion of the study was discontinued. At Children's Hospital the admission rate stayed up appreciably longer, and termination was not indicated until October 19.

During these respective periods a total of 112 patients were enrolled, 90 at the Children's Hospital, 8 at Meyer Memorial and 14 in Elmira. In this total there was apparently only one mistaken diagnosis, in a control child at Children's Hospital who was subsequently found to have tuberculous meningitis and who has been excluded from the data.

On the basis of our knowledge of the actual working conditions of the experiment in the two Buffalo hospitals we feel justified in considering the patients from both as a single group, and the results have been so tabulated. Because of the violation of strict alternation of cases in the Elmira group, and also because the physical therapist there seemed to interpret the gradings

or functionally related groups. For the calculation of the index, some additional combinations were made based on two factors: (1) spinal nerve innervation of muscle groups and (2) advice from the physical therapists as to the fineness with which they could distinguish between the functioning of various muscle groups. Thus all the flexors of the hand were combined in one group, all the small muscles of the hand in another, and so on to a total of thirty-five separate items. The various degrees of muscular involvement as noted by the physical therapists were given progressive numerical values, with normal = 0, good = 1, fair = 2, poor = 3, trace of power = 4 and total paralysis = 5. Where muscles were grouped, the total value for the group was divided by the number of muscles making up the group and the figure obtained was added with all the other separate values to produce a single numerical value for the body

TABLE 3.—Results of Muscle Gradings

(Second, about one week after admission; third, one week later; fourth, five to seven months from onset)
Buffalo 1944

Index of Paralysis	Number of Patients						Per Cent					
	Second Grading		Third Grading		Fourth Grading		Second Grading		Third Grading		Fourth Grading	
	Treated	Controls	Treated	Controls	Treated	Controls	Treated	Controls	Treated	Controls	Treated	Controls
0.....	30	27	25	26	34	34	62.5	61.4	53.2	55.3	73.9	73.9
1- 9.....	11	14	14	14	7	6	22.9	31.8	29.8	29.8	15.2	13.0
10- 59.....	6	2	7	5	5	5	10.4	4.5	14.9	10.6	10.9	10.9
60- 119.....	1	1	..	2	..	1						
120- 169.....	1	..	1	..	..	..	4.2	2.3	2.1	4.3	....	2.2
Grading not obtainable.....	1	4*	2	1*	3	2*						
Total.....	49	48	49	48	49	48	100.0	100.0	100.0	100.0	100.0	100.0

* Including 1 fatal case.

TABLE 4.—Relation of Interval from Onset to Treatment* and Grading Results

Buffalo 1944

Index of Paralysis (4th Grading)	Number of Patients				Per Cent			
	Treated		Controls		Treated		Controls	
	Less Than 4 Days from Onset	4 Days and Over from Onset	Less Than 4 Days from Onset	4 Days and Over from Onset	Less Than 4 Days from Onset	4 Days and Over from Onset	Less Than 4 Days from Onset	4 Days and Over from Onset
0.....	20	14	19	15	74.1	73.7	76.0	71.4
1- 9.....	4	3	3	3	14.8	15.8	12.0	14.3
10- 59.....	3	2	2	3	11.1	10.5	8.0	14.3
60- 119.....	..	..	1	..	....	....	4.0	....
Not obtainable.....	1	2	..	2†				
Total.....	28	21	25	23	100.0	100.0	100.0	100.0

* Regarded as interval from onset to hospitalization in control cases.

† Including 1 fatal case.

during the acute stage of the disease somewhat more rigidly than the other two workers, it was thought best to consider those 14 cases separately, and they will be presented briefly after the Buffalo data.

Table 2 was compiled to test the comparability of the treated and control groups of cases with regard to certain fundamental factors: month of onset, sex, age, interval from onset to hospitalization, spinal fluid cell count and hot pack therapy. Inspection of the figures discloses the fact that the two groups, with the aforementioned case of tuberculous meningitis omitted from the controls, are strikingly similar with respect to every criterion listed. It seems justifiable to conclude on this basis that the study was adequately controlled, and there is no reason to assume that the comparison of treated cases and controls is any less valid where the data on muscle gradings are concerned.

The results of the muscle gradings were expressed in terms of a numerical index. It will be recalled that the grading form itemized fifty-three separate muscles

as a whole. According to this scheme the maximum index possible with each muscular item showing complete paralysis would be 350.

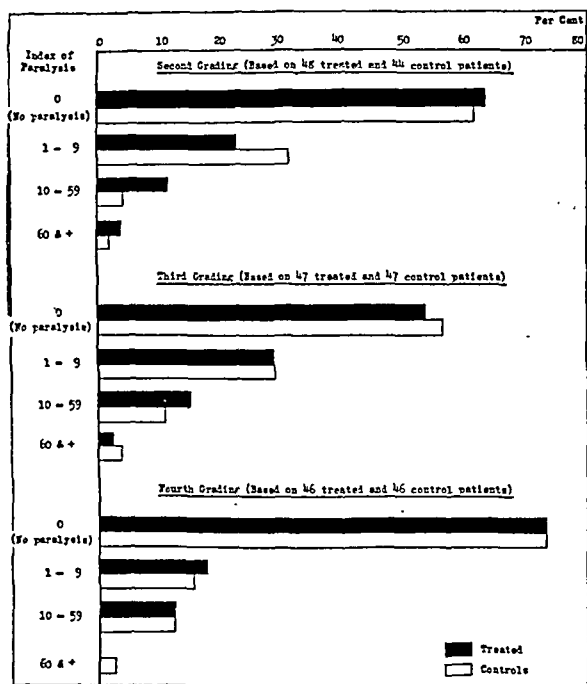
This method of course does not indicate the actual disability of the patient in functional terms, but it does express the disability in somatic terms; that is, in terms of the number of segments of spinal cord involved and the degree of that involvement. This claim seems sound, as muscles were grouped only when they were supplied by the same segments of cord. And for the purposes of this study it is the somatic involvement which is significant, since any significant effect of the agent under investigation would be expressed as the ultimate effect of the virus on the central nervous system.

Table 3 shows the grading results expressed as the numerical index of paralysis, with the treated and control groups broken down according to this index on the second, third and fourth examinations. The results on the first examination are omitted, since all cases had a zero grading at that time by virtue of the basic con-

ditions of the study. Viewed even in terms of individual cases the results are clearcut, but to simplify presentation the indexes were grouped as noted in the table. It is readily apparent from the table that treated and control cases are of essentially equal distribution in each paralysis-index group.

The patient with the highest index in the study (169 on the second examination and 163 on the third) happened to be in the treated group. This child was inaccessible for the six months follow-up because he had moved out of the state, but it was learned at that time through relatives that he still had definite involvement of all four extremities.

Of the other cases classified as "grading not obtainable," all except the fatal case had to be omitted on the second examination because of hyperesthesia of extreme degree. The muscles of 1 of these patients were still too sensitive for grading at the time of the



Results of muscle gradings, Buffalo 1944.

third examination. The other patient missed on the third examination was an air force cadet who was considered well enough for discharge to the infirmary at his base before the grading was due, and the military authorities declined permission for the physical therapist to follow him at the base. On the second grading he had only minimal involvement of the left shoulder with an index of paralysis of 3, and at the time of his discharge from the hospital he was regarded clinically as having no residuum.

With the obvious exception of the fatal case, all those missed on the fourth grading had moved to some point too far from Buffalo to be reached by the physical therapist.

Certain clinical details regarding the 1 patient who died warrant special mention. This child appeared critically ill to the resident at Children's Hospital when she first saw him in the admitting room, and she had a presentiment that he might be a bulbar case. Since she and two other house officers were unable to detect any signs of facial, pharyngeal or respiratory involve-

ment, however, he was admitted to the study in the proper order as a control case. Within one and one-half hours of his transfer to the ward he developed definite respiratory embarrassment. The next day there was a rapid progression of symptoms, and the day after that, forty-eight hours after admission, he died.

TABLE 5.—Criteria of Comparability

Criterion	Number of Patients	
	Treated	Controls
Total	7	7
Month of onset:		
August	4	3
September	3	4
Male	2	5
Under 5 years of age	2	2
5-9 years of age	..	1
10-14 years of age	3	3
15 years and over	2	1
Interval from onset to hospital admission:		
1 day or less	4	4
2-4 days	2	2
5-7 days	1	1
8 days and over	..	..
Cerebrospinal fluid total cell count:		
10 - 49	1	2
50 - 99	1	4
100 - 199	2	1
200 and over	3	..
Had hot packs	7	6

The negative quality of the results in table 3 is emphasized by the percentage distribution also presented there, and it is rendered even more striking by the chart, in which these percentage values are shown in graphic form.

Despite this negative outcome for the group as a whole, consideration was given to the possibility that the therapeutic agent might be of some benefit in early cases. To test this possibility table 4 was prepared, with the patients divided according to whether they were treated within four days of onset or later. Here again the equality of numbers in treated and control groups is striking at each index level, and it is obvious that patients who were treated early in the course of their disease were no better off than those treated late.

With 97 cases from Buffalo as a background, the Elmira cases merit some consideration even though they numbered only 14. The comparability data on them are presented in table 5. It will be noted that even with

TABLE 6.—Results on Fourth Muscle Grading

Elmira 1944		
Index of Paralysis	Treated	Controls
0	1	4
1 - 9	2	2
10 - 29	3	0
Unknown	1*	1†
Total	7	7

* Not available for fourth grading but essentially normal at third grading.

† Not available for fourth grading but information by correspondence claimed complete recovery.

such small numbers the treated and control groups are apparently quite comparable with respect to the factors considered, with the possible exception of somewhat higher spinal fluid cell counts in the treated group.

Table 6 shows the results in 12 of the 14 cases on the fourth muscle gradings. The second and third gradings were not tabulated because of the physical therapist's tendency to make numerous qualifying notations

on her records. This made it difficult to evaluate her findings and reduce them to a numerical index. For the fourth grading, however, when the muscles were no longer hypersensitive, the records are concise and could be coded in accordance with our scheme. From this coding, as presented in the table, it is clear that the 7 treated patients were not benefited by the treatment.

In summary it can be conclusively stated that, in a series of 111 patients with preparalytic poliomyelitis observed for approximately six months after onset, no benefit is detectable when 56 of them who had received large doses of gamma globulin intramuscularly in the preparalytic stage are compared with 55 alternate, untreated controls.

As a corollary to the foregoing conclusion, these data compiled with gamma globulin offer further indication that serum in any form is, for all practical purposes, *ineffective in the therapy of poliomyelitis*. This is evident from the comparison of dosages in terms of poliomyelitis antibodies in gamma globulin and whole plasma presented in table 1. These values are for normal adult plasma collected without reference to an antecedent history of poliomyelitis, but there is no definite evidence that the concentration of neutralizing antibodies against poliomyelitis virus is any higher in convalescent serum than it is in normal pooled adult plasma.⁷

A STUDY OF THE ORIGIN OF AN EPIDEMIC OF POLIOMYELITIS

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BUFFALO

Few reports have been published concerning the sources of the initial cases of poliomyelitis in a large and widespread epidemic, although many investigators have demonstrated the radial spread of the disease from established epidemic areas. Wickman¹ focused attention on a parish school as the possible common source of some of the early cases in the Swedish epidemic of 1905, but he offered no suggestion as to how the infection entered the school prior to the first clinical case. In 1911 Kling and Levaditi² reported that an immune carrier was probably responsible for the introduction of the disease into two small islands off the coast of Sweden. However, in view of present day knowledge, this circumstance is probably not significant since at that time the incubation period of poliomyelitis was erroneously thought to be from two to three days.³ The 1916 epidemic in New York City and environs presented additional evidence to support the thesis that the disease spreads by person to person contact, but

again there was no clue as to the source of the early cases. In several communities, however, an important observation was made, namely that in a previously uninfected area the first recognized case may have had no contact with a clinical case of poliomyelitis from the epidemic areas. Furthermore, in several instances the epidemic was ushered into a new community by several simultaneous, widely separated cases having no possible direct contact with one another.⁴ The obvious conclusion was that during an epidemic period the reservoir for the spread of the virus was not confined to the paralytic cases. Today this is well accepted fact.

In recent years increasing emphasis has been placed on the importance of abortive forms and healthy carriers of the virus in the spread of the disease from person to person and community to community.⁵ Although since the studies of Wickman the existence of such foci of spread has been repeatedly discussed, no observations have been made concerning the role played by such circumstances in the outbreak of a fresh epidemic. In spite of a large body of data supporting the thesis that very mild or abortive forms may be the source of the paralytic cases of the disease, discussions of the origin of epidemics have emphasized the environmental and sanitary factors. Lumsden,⁶ in his report of the 1941 outbreak in Mississippi, stressed specific environmental factors as a background for the outbreak of the disease rather than person to person contact. Similarly, Casey⁷ hypothesized that the first patient and many sporadic cases in the Walker County, Alabama, epidemic of 1941 were exposed to stagnant waters, polluted from an epidemic area. Ward and Sabin,⁸ during a cold winter, isolated the virus from the intestinal contents of 2 patients with poliomyelitis and from a healthy sibling of each. One of the healthy carriers was found to be harboring the virus as long as six months later. Although drawing no conclusions, they inferred that during the interepidemic period patients and healthy carriers may be the reservoirs for virus which may in some way become disseminated.

At the present time the known facts are insufficient to permit conclusions to be drawn regarding the relative importance of environmental and human reservoirs in the initiation of a fresh early summer epidemic. This study was undertaken, therefore, to determine the role which human reservoirs, in the guise of healthy carriers or unrecognized illnesses caused by the virus, may have played in the origin of the first paralytic cases of poliomyelitis in the 1944 epidemic in the Buffalo area. Thus, two pertinent questions presented themselves:

1. Why did 3 almost simultaneous cases suddenly appear in a rural township in which no previous cases had been known for fifteen years?⁹

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The study was aided by a grant from Kart's Dairy, Inc. of Buffalo. From the Department of Pediatrics of the University of Buffalo School of Medicine and the Statler Research Laboratories of the Children's Hospital of Buffalo.

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6. Lumsden, L. L.: An Epidemiological Study of Poliomyelitis in Mississippi in 1941, Pub. Health Rep. 57: 729-733 (May 15) 1942.

7. Casey, A. E.: Place of Contact and Radial Spread of Epidemic Poliomyelitis, Am. J. Dis. Child 60: 152-156 (March) 1945.

8. Ward, R., and Sabin, A. B.: The Presence of Poliomyelitis Virus in Human Cases and Carriers During the Winter, Yale J. Biol. & Med. 16: 451-459 (May) 1944.

9. The last case of poliomyelitis reported to the New York State Department of Health from the town of Eden was that of a 17 year old youth taken sick Aug. 16, 1929.

2. Should the onset of an epidemic be dated from the first cases of paralysis or is its presence obscured by the absence of paralysis or other characteristic manifestations?

DESCRIPTION OF THE BUFFALO EPIDEMIC

During the summer of 1944, Buffalo and its surrounding county (Erie) were the center of the largest outbreak of poliomyelitis in their history, 1,083 cases of the disease, of which approximately 625 were paralytic, being reported. This represented an overall incidence of 1.35 cases per thousand of population.

The first 3 paralytic cases of the epidemic proper developed within the period of May 23-28 in a small rural community about 20 miles south of the city of Buffalo. During the succeeding weeks other cases appeared in the city proper, in the suburbs on the northern side of the city and finally in more distant communities, giving the entire epidemic the characteristics of a disease spread by radial contiguity.

During the preceding year poliomyelitis had existed in the city of Buffalo and its surrounding county, 81 cases having been reported. However, this represented no unusual proportion for the endemic incidence in a community of this size, i. e. approximately 800,000 people.¹⁰

Eleven of these cases occurred during the period from Oct. 1, 1943 to Jan. 3, 1944 and, as shown in figure 1, were scattered over an area within approximately 40 miles of the city of Buffalo. The last 2 cases occurred on an Indian reservation about 25 miles south of the site of the next case, which was the first reported in the 1944 epidemic. However, an interval of five and one-half months elapsed between these illnesses. The proximity of these late fall and early winter cases to the site of the first recognized case of the following summer leads one to suspect that the virus might have been continuously active not far from the community in which the earliest cases of the 1944 epidemic occurred. Furthermore, with the increased travel of war workers back and forth between the city and rural areas the possibility of a person to person spread of the virus certainly existed, with illnesses smoldering over a period of time and finally culminating in a widespread epidemic.

METHODS OF STUDY

Although at the beginning of the 1944 epidemic no one was prepared to conduct an epidemiologic study and many of the facts had to be ascertained at a later date, certain sources of information in the community greatly facilitated the work. Since the first cases developed three weeks before the central school of the township recessed for the summer, the records of school absences furnished an accurate log of a large proportion of the significant illnesses occurring among the child population before actual cases of poliomyelitis were recognized. Fortunately too the school nurse had made immediate inquiry into the reasons for all absences and in many instances had verified these by visits to the home. The nature of the illness or reason for the absence was therefore available from this log in simple terms, such as, cold, "grip," stomach upset, sore throat. A worker from the research staff, with the knowledge of the dates and general natures of the illnesses, interviewed approximately 200 of these

patients, frequently bringing to light additional facts and concluding with clear pictures of the characters of the illnesses. This knowledge proved of great value in studying the early phases of the epidemic.

In order to obtain similar information during the summer recess while the epidemic was at its height, a questionnaire was distributed to each school child as soon as the fall term began. On these the parents recorded the dates and symptoms of any illnesses which had occurred during the period. In this survey, which came at a time when the community was still alarmed by the epidemic and anxious to cooperate in any forward step, additional data were obtained concerning the minor illnesses in the mid and latter phases of the outbreak. Ultimately the entire material relating to community illnesses was transferred to punch cards and sorted by type of illness and week of occurrence.

In addition to these sources of information relative to the minor illnesses in the community, a detailed study was made of the contacts of all paralytic cases in an attempt to trace down the source of each. Special attention was given to the first 3 cases, all of which

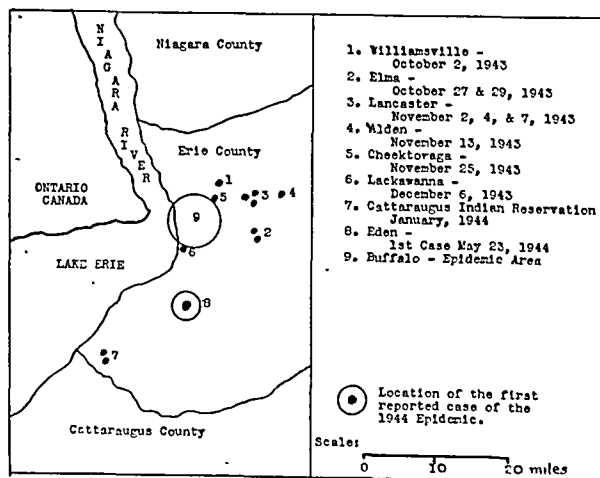


Fig. 1.—Location of cases of poliomyelitis in the greater Buffalo area during the period of eight months preceding the first reported case in 1944. Each dot indicates a case of poliomyelitis.

developed within a period of five days. After ascertaining the activities and habits of the children who acquired the disease, any suggestive illnesses among the contacts could be verified from the records that have been discussed. Activities in four categories were considered: (1) home and neighborhood, (2) school grade, (3) school bus and (4) church. By correlating information from all sources, a satisfactory overall picture was obtained of the health conditions in the community from which the entire epidemic in the area seemed to radiate.

STUDY OF THE FIRST THREE PARALYTIC CASES

At the beginning of the investigation the problem of ascertaining, if possible, a source for the first cases presented itself. This was particularly intriguing since the 3 earliest cases developed within a period of five days and the disease could not, therefore, have been acquired from one another. The study brought to light interesting facts relative to the origin of the earliest cases of paralysis, and these facts pertained to the origin of the entire epidemic as well.

PATIENT I.—A preschool child aged 4 was reported to the department of health with onset on May 23,

10. The Bureau of Census of the United States Department of Commerce, dated Feb. 15, 1944, estimated the population of Erie County, N. Y., as 798,377. The city of Buffalo comprises about 75 per cent of the population of Erie County.

1944. His family is designated A in the following discussion. His father, a repairer of farm machinery in the community, owned a small farm 3 miles from the nearest village. Two older sisters aged 12 and 7 and a twin brother aged 7 went by school bus to the central school. A baby sister and the mother were at home.

Several hundred yards away lived their only intimate neighbors, family B, composed of a mother with 2 children, 1 preschool aged 4 and the other aged 6. The latter used the same school bus as family A. These two families visited each other daily, and once a week the mothers went marketing together accompanied by the 3 preschool children. Aside from these weekly trips to the village, patient I had no contacts except with the 9 members of these two families.

Other members of these family groups had more widespread associations. The 4 school children traveled each day on bus 1, which, owing to wartime restrictions, was decidedly overcrowded. They attended kindergarten, first, second and fifth grades at a central school which had an enrolment averaging about 750. On the playground and in special shop and gymnasium classes they associated with children from other grades. In

SISTER - aged 7 Ill March 6		Rural Community Limited contacts 3 adults 4 school children 2 preschool children
BROTHER - aged 7 Ill March 20	SISTER - aged 2 Ill March 23	
SISTER - aged 12 Ill April 3	PARENTS Ill April 2	
ADULT NEIGHBOR Ill April 23		
NEIGHBOR CHILD - aged 5 Ill May 8		Mothers shop together weekly
PATIENT - aged 4 Paralytic Poliomyelitis May 23		Birthday Party May 12
		First case of Epidemic.

Fig. 2.—List of illnesses among 8 of the 9 close-contacts of case 1. Note that the interval between illnesses is approximately two weeks.

a third family, family C, living half a mile away, were 5 children all but 1 of whom rode on bus 1. The 2 girls in family C came occasionally to the A house to play with the 12 and 7 year old children. No other contact with family C is admitted. Two other families lived across the road from family A but neither had children nor any contact with family A, B or C. It is entirely probable, therefore, that if patient I acquired his poliomyelitis from a human reservoir the source must have been 1 of the 9 members of families A and B. The known facts contain no information relative to environmental factors as a source for the disease in family A except that analysis of water from a well located not far from the barn showed it to be "unsafe" for drinking. Their toilet was in the cellar and emptied into a cesspool in a field at least 150 feet from the house and well.

Among the 9 contacts of patient I, 8 were known to have had an illness of some kind during the three months preceding the recognition of poliomyelitis in the group. Figure 2 presents these illnesses in simplified form. Six of the patients had rather widespread outside contacts and might have been concerned not only with the origin of the first paralytic case but also with the spread of the epidemic. The following is a description of these illnesses:

1. Sister, aged 7, was sick March 6-9 with fever, "cold" and headache, which was so severe that she cried out frequently from the pain. A search among her friends and acquaintances and a check on the school absence lists failed to reveal a likely source of this illness.

2. Twin brother of the preceding child was sick March 20-23. The symptoms were fever, sore throat and a "cold," which were so severe that for a time pneumonia was considered. It appeared probable that he had acquired the infection from his twin sister and that the incubation period was approximately two weeks.

3. Baby sister, aged 2, was ill March 23-25 with symptoms of "a very bad cold." Since she was too young to have had significant contacts outside the family, it seemed likely that she too acquired the infection from the older sister (1). Contacts between these two were less intimate than between the twins (1 and 2), and if contact was assumed to have taken place toward the end of the illness of 1 the incubation period would again be approximately two weeks.

4. Sister, aged 12, was ill April 3-5 with a sore throat. Since she was in daily association on the school bus and at home with 1 and 2 and had little time for play with her baby sister (3), the brother (2) seems to be the more likely source. Again the incubation period appears to be about two weeks.

5 and 6. The mother and father both had symptoms of a "bad cold," felt miserable and had mild diarrhea, the illness lasting three or four days. This occurred about the first week in April, but there was no way of verifying the exact date. The probable source was the youngest child, and therefore the incubation period was approximately two weeks.

7. Mrs. B, intimate neighbor, was ill April 23-27. She complained of a "heavy cold" with fever, dizziness, severe headache, severe pains in the legs and moderate diarrhea. This occurred approximately two weeks after the illness of Mrs. A.

8. Son of Mrs. B., aged 6, was ill May 8-16 with "cold," fever and some diarrhea. Although attending kindergarten and riding on the same bus as the children from the A family, he had not yet acquired intimate friends in school. He had been, however, in close contact with his ill mother (7) two weeks before and according to school records had been kept home on April 25 to take care of his mother.

9. Patient I, the 4 year old member of the A family, developed poliomyelitis with prodromal symptoms beginning on May 23, 1944 and sudden leg paralysis on May 25. On May 12 the 6 year old neighbor (8) had felt better and had gone with his mother and sister to a birthday party at the A home. No other outsiders attended. This first case of paralytic poliomyelitis had its onset of prodromal and paralytic symptoms eleven and thirteen days respectively after this gathering. All during the period of preceding illnesses in the families A and B, child 9 had not developed any symptoms in spite of his close association with each illness. At the time his parents considered this extraordinary. His poliomyelitis climaxed the series of illnesses, and thereafter no one was ill in either family, although the epidemic of infantile paralysis and "grip" raged throughout the community for the succeeding three months.

10. No symptoms are known to have occurred in the 4 year old preschool member of the B family who was a constant playmate of child 9. One can only conclude that this child either had symptoms so mild as to have passed unnoticed or acquired immunity without symptoms of any kind.

Family C, whose contacts with family A were limited to infrequent visits between 2 children from each home, had no illnesses or absences before the first case of definite poliomyelitis. However, simultaneously with this illness 2 girls of the C family were sick for a week with symptoms suggestive of poliomyelitis—fever, headache, vomiting, dizziness and pains in the muscles of the neck, back and legs. Two other members of the family were ill several weeks later.

In summary, patient I developed paralytic poliomyelitis at the end of an eleven week period during which 8 of his 9 associates had illnesses with incubation periods of approximately two weeks. At least one of these

illnesses (7) was highly suggestive of so-called abortive poliomyelitis. The symptoms of the others could not be distinguished from common winter respiratory infections. Circumstantial evidence would suggest that these illnesses represented mild forms of poliomyelitis and were followed by definite paralytic symptoms in the 4 year old child. The incubation period of approximately two weeks is distinctly different from that of common respiratory diseases with which abortive poliomyelitis is most likely to be confused. Judging from this study one would postulate that the poliomyelitis virus had been active in the community for at least eleven weeks prior to the first paralytic case of the disease.

PATIENT II.—A boy aged 9 years lived in a rural but less isolated section of the township than patient I. His family consisted of the father, a worker in a nearby airplane factory, mother and sister aged 5. Within an easy walking distance of their farm were homes of a few children who rode on the same overcrowded school bus, No. 2. At the central school of the township he attended the third grade and in addition had contacts with other children on the playground and at lunch. Contacts of patients I and III attended the same school but traveled on different busses. At home he usually played by himself, but occasionally at a nearby creek he came in contact with several children who associated with patient III. This child had no church affiliations, and therefore his contacts were limited to the school bus, the school and a few children at home. In general, however, his companions and contacts were more numerous than in the preceding case.

Although the setting in this case is too complicated to determine a single source for his poliomyelitis, the general picture of known illnesses among the neighborhood, on the school bus and in the class room is not inconsistent with that described in case 1. His poliomyelitis also developed in a setting of minor illnesses which were similar to those known to be caused by the virus of the disease. The following facts appear significant:

1. Patient II complained of the earliest prodromal and meningeal symptoms on May 24 and paralysis on May 31.

2. An illness, simultaneous in onset with that of patient II, May 26-June 3, occurred in a school contact, BB, aged 10, who boarded the school bus just before patient II. BB was ill for one day with fever, headache and vomiting. During the following three days he felt better but not as well as usual. A second phase with fever, vomiting, pains in the legs and difficulty in walking then set in, but gradual recovery took place without residual weakness.

3. A neighborhood playmate and bus companion of patient II had a sore throat and was absent from school on May 18. A classmate of patient II, who lived a short distance away and rode a different bus, was also ill on May 18 with a "stomach upset" and moderately severe headache. The latter child was a neighbor of patient III.

4. Case II was linked directly or indirectly with four suspicious illnesses occurring prior to clinical poliomyelitis in the community. Three of the children were classmates and the fourth rode on the same school bus.

In summary, although no single specific human source could be ascertained to account for the poliomyelitis of patient II, he is known to have had contact with suggestive minor illnesses, indirect contact with the 2 earliest children with the disease, and to have been circulating in a community where minor illnesses, often corresponding to the symptoms described in abortive poliomyelitis, were prevalent.

PATIENT III.—A girl aged 14 lived on a farm about a half mile from patient II and 4 miles from patient I. Besides the father and mother there were 2 younger children aged 2 and 11 years. She attended the ninth grade of the central school, using bus 3, which carried a few children from the neighborhood of patient II. Two neighbor families with a total of 6 children had continuous contact and rode on the same school bus. Within a half mile were several other families with which contact was casual and infrequent except for the school bus and Sunday school. The following facts are significant regarding illnesses among the contacts:

1. Patient III complained of her first symptoms on May 28 and paralysis on June 2, 1944. In view of the stoical characteristics of the child, prodromal symptoms may have preceded May 28.

2. Simultaneous illnesses beginning on May 26 occurred in her 2 siblings aged 2 and 11 years. The older child complained of fever, general malaise and dizziness coming in two distinct waves. The younger child had only a one day febrile illness. The concurrent appearances of these three illnesses suggests a common source in the immediate neighborhood.

3. The 3 children of a near neighbor, who were constant playmates of patient III and her siblings, were all ill between May 14 and May 17. Two had a three day fever with sore throat, stomach upset and pains in the legs. The third had similar symptoms but without painful extremities. One of the children was a classmate of a sibling of patient I, who was ill,

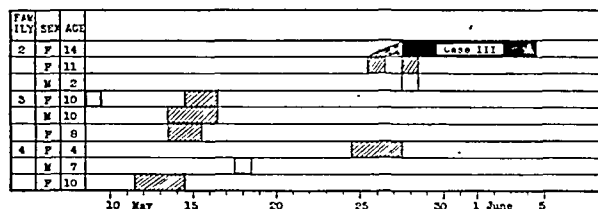


Fig. 3.—Illnesses among the close contacts of case 3. The solid black represents paralytic poliomyelitis; shaded blocks represent an illness which is highly suggestive of being "abc"; dotted blocks represent an illness which has no common gastrointestinal or respiratory symptoms; triangle indicates uncertain or indefinite prodromal symptoms.

as already mentioned, with sore throat on April 3 to 5, patient I (4).

4. The second near neighbor had three children aged 10, 7 and 4, all of whom were ill between May 12 and May 28 with fever, upset stomach and headache lasting two to three days. Their contact with the family of patient III was less intimate than the previously mentioned children. The illnesses in this family, therefore, may possibly have been acquired from other friends or schoolmates.

In summary, because of the simultaneous illnesses in the siblings of patient III, 1 of whom was a preschool child, a common neighborhood source seemed likely. The 3 most intimate playmates of patient III and her siblings had minor illnesses approximately two weeks before, two of which were suggestive of abortive poliomyelitis. The illnesses are presented in figure 3. In conclusion, patient III developed paralytic poliomyelitis within five days of the onset in cases I and II. There had been no direct contact with patient I and only indirect contact with patient II. Furthermore, the short periods between onsets, one and five days respectively, would indicate either a common source for all or multiple separate sources. While the situation in both cases II and III is more complicated than in case I, the preponderance of evidence suggests multiple and not common sources for all 3.

CASES IN THE COMMUNITY SUGGESTIVE OF
POLIOMYELITIS

In the course of studying 20 reported cases of poliomyelitis and the many minor illnesses among school children, numerous persons of various ages were found whose symptoms were so suggestive or whose illnesses were so closely linked with cases of poliomyelitis that they deserved special consideration. An analysis of these cases was undertaken to study what part, if any, they may have had in the origin of the epidemic.

The nature of the illnesses which were considered as being suggestive of poliomyelitis varied greatly. Some of them were mild and lasted only twenty-four hours; others were severe with symptoms continuing for eight to ten days followed by a prolonged period of convalescence. In the mildest instances a running nose, a brief fever or a bout of vomiting might attract little attention in the family, yet from the circumstances surrounding the patient and the illness there seemed little doubt concerning the etiologic nature. In other persons high fever, persistent headache, stiffness of the neck and back and aches and pains in the legs gave the usual picture of so-called abortive poliomyelitis. All gradations of symptoms and severity were encountered.

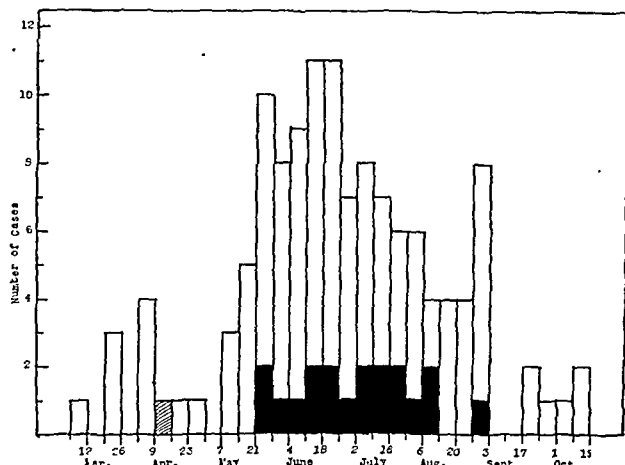


Fig. 4.—Time relationship of 108 cases of abortive poliomyelitis to the 19 cases reported to the department of health. The one case in the shaded block was not recognized as paralytic poliomyelitis until approximately a year after the acute illness.

Before the attention of a community has been called to the possibility of abortive poliomyelitis by the development of a paralytic case, such illnesses usually escape detection. Twenty suggestive illnesses of this nature occurred in the community under discussion before the first recognized case. Nearly a year later 1 of these was found to have a decided degree of residual weakness of one leg and rightly belongs with the diagnosed cases. It is interesting to note that among the 20 persons with suggestive illnesses occurring prior to the recognition of the first paralytic case, 15 were school children, 1 was a preschool child and 4 were adults. In all, nine families were represented. Nine individuals could be linked either directly or indirectly to case I, 4 to case II and 5 to case III.

The dates of onset of the 108 illnesses considered to be highly suggestive of poliomyelitis are presented in figure 4. It will be noted that, while the paralytic cases in the community extended only over a fourteen week period, the suggestive illnesses continued throughout thirty-one weeks. The concentration of cases in the two classes occurred at the same time, but the undiag-

nosed illnesses began earlier and continued later in the season. The earliest suggestive case occurred on March 6, or eleven weeks before the first case of paralysis.

It would appear, therefore, that illnesses which were highly suggestive of poliomyelitis were occurring in the community approximately three months before the first cases of paralysis were recognized. This is in agreement with the studies reported in the preceding section, which indicated that multiple sources already existed at the time the first 3 cases of paralysis developed. The proportion of 5 highly suggestive cases for each paralytic one is probably a conservative figure.

MINOR ILLNESSES IN THE COMMUNITY

Preceding and during the period when cases of paralytic poliomyelitis were appearing in this community, there were many minor illnesses lasting one to three days and passing for colds or "grip." Some of these were predominantly respiratory in character, others gastrointestinal. Whether these illnesses differed in any way from those more or less prevalent at that time in other years could not be determined from the descriptions given by the persons affected or from the reports of the practicing physicians in the locality. Many of these were investigated by home visits, but even when the details of symptoms could be accurately recalled there was nothing concrete to serve as a basis for distinguishing those caused by common pathogens from others which, on good circumstantial evidence, must have been caused by the virus of poliomyelitis. Illnesses might occur among siblings or intimate contacts of known cases of the disease, yet the cold, running nose, sore throat, fever or vomiting described would differ in no observable way from similar symptoms in other years. Even a thorough physical examination usually failed to reveal anything characteristic of poliomyelitis. Without the aid of extensive laboratory facilities there is apparently no way of diagnosing the disease in its mildest forms. At times, however, it becomes evident in the course of history taking that the incubation period between such illnesses is different from the one to two day period of the common respiratory infections and is instead from ten to fourteen days. This in itself has served at times as a useful guide to suggest that the disease in question may have been specific in nature.

Although an attempt was made to estimate the number of such minor illnesses in the community during the epidemic, the practical difficulties were so great that no reliance could be placed on the results obtained. However, the impression was gained that such illnesses were very prevalent both before and during the epidemic. The often quoted estimates of 10 to 40 abortive cases for every one in which paralysis develops would not seem unreasonable in the light of our experiences.

COMMENT

An attempt has been made in the present study to ascertain some of the circumstances which gave rise to the epidemic of poliomyelitis in the Buffalo area in 1944. Particular attention has been directed toward the possible human sources of the outbreak, since it is now well established that during such an epidemic the most common method of spread is by person to person contact. Evidence has been accumulated which points to the conclusion that the disease was prevalent in the initial community long before the first case of paralysis was recognized. This evidence is based on studies of the illnesses among contacts, both direct and

indirect, of the first 3 cases of paralysis and on a knowledge of the minor illnesses, many of which were undoubtedly caused by the virus of poliomyelitis, which occurred in the school population during the months preceding the outbreak.

Although at the time of the epidemic the first case was believed to have developed on May 23, 1944, a year later the diagnosis of paralytic poliomyelitis was made on a patient whose acute symptoms had occurred on April 12, 1944. In addition, investigation of illnesses occurring in the community during the preceding winter and spring revealed that symptoms strongly suggestive of abortive poliomyelitis had occurred as early as March 6, 1944. This was only two months after the development of 2 cases of the disease in a neighboring community—January 3. Scattered cases had occurred during the preceding summer and fall. It seems highly probable, therefore, that the virus was continuously active but unrecognized in the area for approximately a year before an "epidemic" developed.

As a result of observations on the cases of abortive poliomyelitis and minor illnesses which preceded and followed the period in which paralytic cases developed, it appears that the concept of what constitutes an epidemic of infantile paralysis should be broadened. If the virus is a prevalent cause of symptoms many weeks before the first case of paralysis and for some time after the last, it is evident that the "epidemic" extends over a much longer period than has previously been considered. From the point of view of public health and of the development of a preventive program, some modification of our definition of the term is essential. The following divisions are suggested as offering a sound basis for efforts in the future:

1. Preparalytic phase. The duration of this phase may cover several months. Minor and suggestive illnesses begin to occur in the community but no paralysis is apparent. Evidence of a prolonged incubation period should arouse suspicion.

2. Paralytic phase. The duration of the phase of paralysis tends to be upward of three to four months. During this time nonparalytic and paralytic cases of the disease are common, and suggestive and nonspecific minor illnesses tend to reach their peak. Formerly the term "epidemic" was applied only to this period.

3. Postparalytic phase. The duration of this period tends to be shorter than that of phase 1, possibly because the proportion of susceptible individuals has now become quite small. Paralytic cases have disappeared, but mild forms of the disease still continue but in decreasing numbers.

4. Interepidemic phase. The duration of this phase is at present indeterminate. Paralytic and suggestive illnesses are absent or very rare. How the virus survives during this period can only be surmised. However, it is known to survive for at least six months in the stools of healthy carriers and for about a year in a frozen state.

An "epidemic" of poliomyelitis may well be under way long before paralytic cases are recognized.

In many respects such a concept of an epidemic has striking similarities to one caused by a virulent strain of the hemolytic streptococcus. In both the etiologic factor may be widespread before the epidemic is recognized. In the one the symptoms which attract attention are scarlatiniform rash, septic sore throat, hemorrhagic nephritis and erysipelas; in the other meningeal signs and paralysis. The number of individuals harboring the causative agent is far greater than the number recognized to have characteristic symptoms. Carriers may be circulating in the community and can be detected only by laboratory tests. Both are spread largely by

person to person contact. When these similarities are considered, an epidemic of poliomyelitis loses many of its peculiar features and conforms to an understandable pattern.

Why, however, if the virus is active in the community for several months, should paralytic symptoms appear only during the period of warm weather? While no definite answer can be given, several suggestions deserve consideration. First, it seems evident from this and former studies that the proportion of paralytic to non-paralytic cases is small. Only when the latter has reached a relatively high incidence level would the paralytic cases be expected to appear. The incidence of all forms is so clearly at a maximum during the summer months that it is only reasonable to expect paralysis to be most common at this time. Secondly, the clinical literature contains many reports suggesting that physical fatigue during the incubation and prodromal periods may encourage the development of paralysis. Certain it is that with the advent of warm weather children exercise far more vigorously than they are accustomed to in the winter. Two of the first 3 cases of paralysis in the present epidemic gave histories which lend support to this suggestion. The subject deserves further consideration. Thirdly, the summer season is the time of most widespread human contacts, particularly in rural areas. Certainly opportunities for person to person spread during this season of the year are many and varied, but why poliomyelitis should behave so differently from other diseases transmitted by similar means is by no means clear. Possibly the answer lies in a relatively greater resistance of the virus to sunshine and heat or to the summer state of the human host.

Mention should be made of the possible role which environmental and sanitary conditions may play in the origin and progress of a poliomyelitis epidemic. It is well known, particularly from the work of Paul and his associates,¹¹ that during and for some time after an epidemic the virus can be isolated from sewage, from outside toilets, occasionally from polluted and stagnant water, and in a few instances from flies which have been caught in nearby areas. Under some of these conditions the virus may remain active for several months. Theoretically, such nonhuman reservoirs would be expected to play an important role in the initiation of an epidemic and in the spread of the disease from person to person. Yet, in spite of the comparative ease with which poliomyelitis may be experimentally transferred to monkeys from these reservoirs, it has not been established that the virus in such form gives rise to the human disease. The possibility undoubtedly exists, but direct proof is still lacking. On the other hand, there is a large body of data indicating that poliomyelitis often passes from person to person by respiratory or oral transfer. The "source" usually suffers from an illness of some sort and is not a healthy carrier as ordinarily defined. This subject will be dealt with more extensively in a subsequent report.

In the community discussed in the present report a minority of the families in which paralytic poliomyelitis occurred used privies. Drainage from several of these might eventually find its way into a creek which flowed

11. Paul, J. R., and Trask, J. D.: Occurrence and Recovery of the Virus of Infantile Paralysis from Sewage. *Am. J. Pub. Health* 32: 235, 239 (March) 1942. Paul, J. R.; Trask, J. D.; Bishop, M. B.; Melnick, J. L., and Casey, A. E.: Detection of Poliomyelitis Virus in Flies. *Science* 64: 395 (Oct. 24) 1941. Ward, R.; Melnick, J. L., and Horstmann, D. L.: Poliomyelitis Virus in Fly Contaminated Food Collected at an Epidemic, *ibid.* 101: 491 (May 11) 1945.

through the township and was used for swimming below the site of the infected houses. No studies were made to determine the presence of virus in the creek, but evidence from other sources, including that presented in the first part of this report, would indicate that at best polluted streams and outside toilets could account for very few of the known cases of the disease, and almost certainly not for the first case. The evidence pointed predominantly toward a person to person transfer of the virus, most likely by means of respiratory or oral secretions. In the first reported case quite clearly the infection was acquired not "de novo" from some nonhuman source but as part of a local epidemic which had been in progress for at least three months.

The observations presented in this report offer several aids for the study of future epidemics of the disease. Perhaps most important of all is to direct attention to the interepidemic period. A greater awareness of the variety of symptoms encountered in abortive poliomyelitis might lead to earlier recognition of the disease in a community. After an epidemic has become well established it is usually too late to make the epidemiologic and laboratory investigations needed to throw light on the earliest phases of its spread. However, if teams of trained community investigators and laboratory workers could be prepared to make use of all possible developments in a particular area, there seems to be little doubt that over a period of time the torch of knowledge could be extended steadily further into the unknown. Only by such well planned and thoroughly executed labors can a sound foundation be laid for a successful preventive program.

SUMMARY AND CONCLUSIONS

A study has been made of the circumstances surrounding the development of the first 3 paralytic cases of poliomyelitis in the 1944 epidemic in the Buffalo area. The evidence indicates that these cases did not arise "de novo" but were relatively late developments in a cycle which had been in progress but unsuspected for approximately three months.

Although a period of five and one-half months elapsed between the last reported case of the preceding season and the first of the 1944 epidemic, the interval was only two months to the earliest 1944 minor illness which, based on circumstantial evidence, was caused by the virus of poliomyelitis. In view of the difficulties in recognizing such minor illnesses it seems probable that the virus was continually active in the area throughout the entire period between the two cycles.

The incidence of illnesses in the community, which were highly suggestive of being nonparalytic forms of the disease, was at least five times the number of recognized poliomyelitis cases. The week by week distribution of these suggestive illnesses followed the same general pattern as the reported cases but began earlier in the season and extended later. Other minor illnesses simulating ordinary gastrointestinal and respiratory infections were also widely prevalent.

Although no laboratory studies were made, the evidence presented suggests that the Buffalo epidemic was initiated and spread largely through direct human sources and not from polluted sewage, streams, toilets or insanitary environmental conditions.

It is suggested that the definition of an epidemic of poliomyelitis be broadened to include the preparalytic and postparalytic phases of the cycle.

219 Bryant Street, Buffalo 9.

EFFECT OF EXERCISE ON BLOOD PRESSURE OF PATIENTS WITH ADVANCED HYPERTENSION

BEFORE AND AFTER THORACOLUMBAR SYMPATHECTOMY

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The most important measure of the value of an operation designed for the treatment of hypertension is the degree of fall in the blood pressure postoperatively. When results are discussed, the change in the levels of the blood pressure far outrank in importance the other measures of improvement, such as symptomatic relief, regression in cardiac size, improvement in the electrocardiogram and the eyegrounds. Smithwick¹ has emphasized the need for determining the blood pressure in the lying, sitting and standing positions preoperatively and postoperatively because of the significant effect of posture on its level.

TABLE 1.—Average Blood Pressure Levels of Thirty Patients

	Resting	Standing	After Exercise
Preoperative.....	200/122	202/132	223/138
Postoperative.....	160/107	141/103	158/106

TABLE 2.—Analysis of Change in Blood Pressure Levels of Thirty Patients Following Exercise

	Fall	Same	Rise
Preoperative			
Systolic.....	3	1	26
Diastolic.....	3	1	26
Postoperative			
Systolic.....	15	5	10
Diastolic.....	12	8	10

As a result of some interesting experimental data obtained by Blakemore and King,² we have studied the effect of moderate exercise on the blood pressure of a group of patients suffering from advanced hypertension before and after thoracolumbar sympathectomy. Blakemore and King observed that the blood pressure of normal dogs exercised on a treadmill did not change significantly. However, if the animals were sympathectomized, similar exercise resulted in a definite fall in the blood pressure, the fall being roughly proportional to the magnitude of the sympathectomy.

Another point of importance is the fact that patients with hypertension in all but the terminal stage are individuals who are exercising to a greater or lesser extent in their daily activities and experiencing emotional situations, both factors being quite different from the more or less basal conditions of blood pressure determinations as emphasized by Smithwick in the study of patients before and after sympathectomy.

We have determined the blood pressure in 30 consecutive ambulatory patients before and after sympathectomy in the following way:

The patient lies quietly for five minutes, when the blood pressure is taken; the patient assumes the sitting

1. Smithwick, R. H.: Surgical Treatment of Hypertension, Arch. Surg. 49: 180-193 (Sept.) 1944; The Surgical Treatment of Hypertension, New York State J. Med. 44: 2693-2700, 1945.
2. Blakemore, A. H., and King, B.: Personal communication to the authors.

position and the blood pressure is taken after one minute has elapsed; the standing position is next taken and after one minute the blood pressure determined and then the patient exercises by stepping up and down onto a low footstool first with one leg then with the other for twenty times in all and with each step raises the arms from the side anteriorly to the horizontal level. Postoperatively the same routine is repeated when the patient is sufficiently strong to carry out the exercise test.

The results are interesting and lend added weight to the value of thoracolumbar sympathectomy in the treatment of hypertension. Table 1 shows the average systolic and diastolic blood pressure levels of the 30 patients determined first in the lying position, then in the standing position and finally after the exercise test. Also shown are the averages for the same patients following the two stage thoracolumbar sympathectomy. It is noteworthy that preoperatively exercise elevates the systolic by 23 mm. of mercury and the diastolic by 16 as compared with the resting levels. On the other hand, postoperatively exercise causes no significant change in the level of the blood pressure. Further, a comparison of the preoperative and postoperative resting diastolic levels reveals a fall of 15 mm., which places the entire group into group III of Smithwick. However, a comparison of the preoperative and postoperative diastolic levels after exercise shows an average fall of 32 mm.; in other words, Smithwick's group I. Chart 1 illustrates in another way these data.

An analysis of the data obtained from the study of the effect of exercise on levels of the 30 patients before and after sympathectomy reveals that 26 patients pre-

figure being 107 to 106 mm. (table 1). Of the systolic levels 15 fell, there was no change in 5, a rise occurred in 10 and there was an average of 160 to 158 (table 1). These data are shown in table 2.

The levels of blood pressure obtained from 1 of the patients illustrating the effect of exercise before and

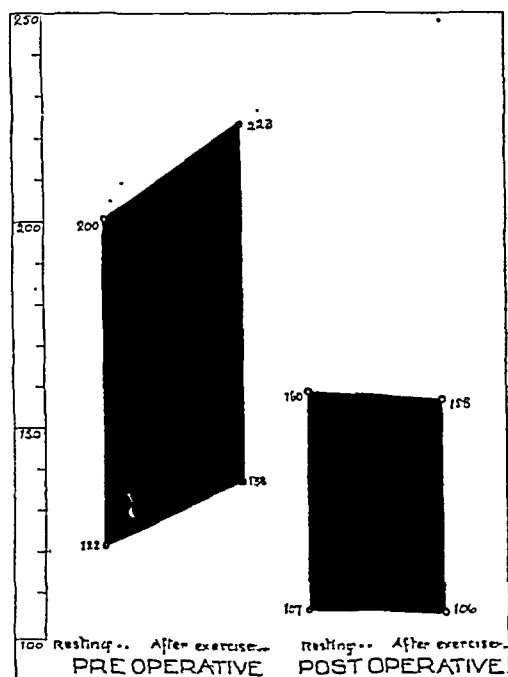


Chart 1.—Preoperative and postoperative diastolic levels.

operatively showed a rise in the diastolic level, in 1 there was no change, and in 3 exercise caused a slight fall. The postexercise level was compared with the resting level in each instance. Precisely the same proportion held for the systolic levels. However, postoperatively the exercise study showed a fall in the diastolic in 12 patients, no change in 5 and a rise in 10, the average

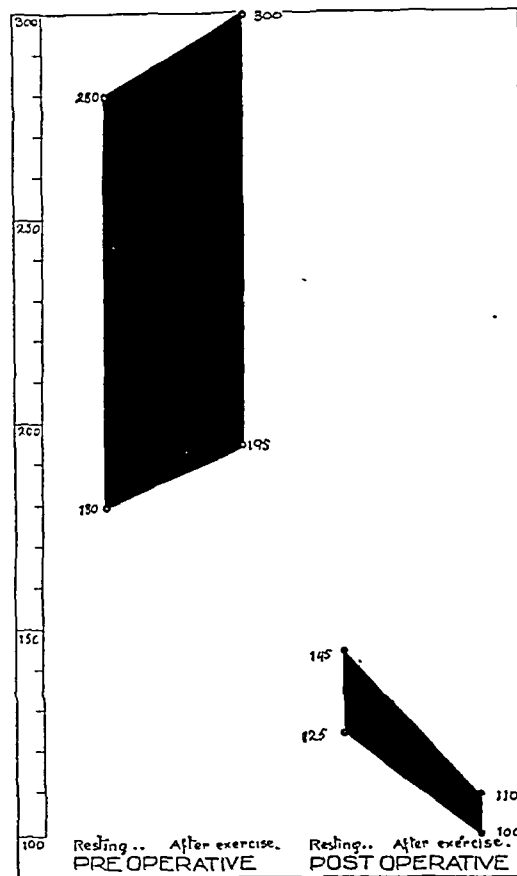


Chart 2.—Effect of exercise before and after thoracolumbar sympathectomy.

after thoracolumbar sympathectomy are presented in chart 2. The patient was a white man aged 42 with malignant hypertension, having an elevated nonprotein nitrogen level of 50 mg. per hundred cubic centimeters, the eyegrounds showing hemorrhages, exudate and papilledema and there being a urea clearance of 27 per cent. The resting blood pressure of 280/180 rose to 300/195 following exercise. One month postoperatively his resting level was 145/125, which after exercise fell to 110/100. Symptomatically the patient feels much improved. Three months postoperatively the patient's resting blood pressure was 130/80 and a urinalysis showed no albumin or red blood cells, in contrast to the preoperative examination, which revealed innumerable red blood cells and over 100 mg. of albumin per hundred cubic centimeters.²

SUMMARY

To our knowledge the favorable influence of exercise on the blood pressure of patients with advanced hypertension following thoracolumbar sympathectomy has not hitherto been mentioned. In the series of 30 patients discussed in this paper the average postoperative fall in the resting diastolic blood pressure was 15 mm. However, when the preoperative and postoperative

diastolic levels following exercise were compared, an average fall of 32 mm. was observed.

The evidence further emphasizes the value of thoracolumbar sympathectomy as a therapeutic measure in the management of patients suffering from advanced hypertension.

130 East Seventy-Ninth Street.

INSOMNIA DUE TO LEFT VENTRICULAR HEART FAILURE

UNRECOGNIZED AS SUCH AND INADEQUATELY TREATED

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AND

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The signs and symptoms of left ventricular failure have been described frequently, and their clinical significance is well known. Certain symptoms, namely exertional dyspnea, paroxysmal nocturnal dyspnea, orthopnea and sometimes cough, and certain signs, namely gallop rhythm, pulsus alternans and increase of the pulmonary second sound, are generally recognized as early evidence of failure of the left side of the heart. Patients with dyspnea and orthopnea do not, as a rule, sleep well, but little space in the literature has been devoted to the insomnia resulting from these symptoms other than to mention that it occurs, for in most patients the insomnia is of secondary importance. Relief of pulmonary congestion by either digitalis or diuretics often causes a striking improvement in the patient's condition, and as the orthopnea disappears so does the accompanying insomnia.

There are patients, however, with left ventricular failure and pulmonary vascular congestion in whom the principal complaint is insomnia with little or no recognition of shortness of breath. In reviewing the literature we were unable to find any discussion of such cases. The following cases are therefore of interest:

CASE 1.—A business man aged 69 was first seen medically by us for a check-up in November 1941. Hypertension had been found a year before, but the patient had noticed no symptoms. On physical examination his heart was found to be slightly enlarged, and there were slight apical and aortic systolic murmurs. The pulse was regular at a rate of 80, and the blood pressure was 220 mm. systolic and 140 mm. diastolic. There was no evidence of congestive failure. Fluoroscopy of the chest showed moderate cardiac enlargement without pulmonary congestion. An electrocardiogram was normal.

He remained in good health until December 1942, when he began to suffer from substernal pressure on effort. This symptom progressed in frequency until May 1943, when he had several nocturnal attacks culminating in an episode of substernal oppression with radiation to the arms and jaw, which lasted many hours. He was admitted to the hospital, where an electrocardiogram confirmed the diagnosis of acute myocardial infarction. Physical examination was unchanged except for the presence of a very slight aortic diastolic murmur. He made an uneventful recovery and was sent home without any medication.

During the next year he continued to do well, working as usual, but his blood pressure remained high and his heart size increased a little. In June 1944 he developed a thrombosis involving the optic tracts and had a partial hemianopsia, from which he largely recovered in a few weeks time. In September, because of the finding of a larger heart and a slight diastolic

gallop rhythm, he was digitalized. There was no evidence of pulmonary congestion, but left ventricular failure was thought to be impending.

His health remained about the same until late in December 1944, when he began to complain of insomnia. During the next few weeks his insomnia became more severe and did not respond to various hypnotics. He also began to complain of having to sit up nights and of increased dyspnea on exertion. Examination revealed a return of the gallop rhythm, accentuation of the pulmonary second sound and a slight increase of the jugular pulse. The lungs were clear. On a regimen of ammonium chloride, increased digitalis and limited fluids and salt he immediately improved and was able to sleep well again. He then continued to be active and slept well until Jan. 26, 1945, when he had a brief episode of acute pulmonary edema, which responded to rest and diuretics.

CASE 2.—A business man aged 54 was first seen by us in February 1943 with complaints of nervousness, palpitation and fatigue and a history of hypertension for the previous twenty-five years. For several years he had been taking digitalis because of an irregular pulse, but there had been no episodes of congestive failure. Physical examination revealed a blood pressure of 172 mm. systolic and 102 mm. diastolic at a pulse rate of 72. The heart was enlarged, but the sounds were of good quality and there were no murmurs. No evidence of congestive failure was found. Fluoroscopy of the chest revealed slight fullness of the left ventricle but no pulmonary congestion. An electrocardiogram showed auricular fibrillation at a rate of 70, with sagging of the ST segments, presumably due to digitalis effect. A diagnosis was made of hypertensive heart disease and auricular fibrillation.

The patient improved and remained well until May 1943, when he noted the gradual onset of shortness of breath on exertion, culminating in several brief attacks of paroxysmal nocturnal dyspnea. Examination at that time revealed slight orthopnea, increased venous pulse in the neck, increased heart size, a diastolic gallop rhythm, a slight (grade 2) apical systolic murmur and signs of congestion with fine rales at the lung bases, liver enlargement and slight sacral edema. Left ventricular failure secondary to hypertension was considered to be the predominant cause of his symptoms, and treatment with diuretics was recommended. He improved rapidly and did well for a short time thereafter.

He was seen at frequent intervals during the summer and fall of 1943, complaining of progressive insomnia and nocturia without other urinary difficulties. Examination at these visits showed no evidence of peripheral or pulmonary congestion, and the heart sounds had improved, with a disappearance of the gallop rhythm.

During the late fall his insomnia grew much worse, and though he stated that he did not have shortness of breath he insisted on sitting in a chair most of the night. A number of sedatives and hypnotics were tried without giving him relief, generally producing disorientation. He gradually became so restless, nervous and apprehensive that commitment to a mental hospital was considered and he was therefore seen by a psychiatrist. The latter thought the patient might have a toxic psychosis. In December 1943 he was hospitalized for study. On examination he presented evidence of congestive failure with a return of the jugular pulse, gallop rhythm, an apical systolic murmur and liver enlargement. The lungs were clear on physical examination, but an x-ray film of the chest showed the lung markings to be prominent. All sedation was stopped, and he was given ammonium chloride and mercupurin, in addition to the digitalis and the fluid and salt restriction already in use. He had a good diuresis with an increase in his vital capacity from 2.8 to 4.0 liters, a disappearance of his congestive failure and complete relief of his insomnia. His mental state improved immediately, and within a few days he felt normal. After a few weeks of rest in the hospital he went home greatly improved.

For six months he continued to feel well without insomnia or evidence of congestion. He did not require mercurial diuretics. In August 1944 he again complained of insomnia without

shortness of breath, and examination showed a return of the congestive failure. Again the insomnia disappeared when his daily ration of digitalis was increased and mercurial diuretics were given. He has remained fairly well to the present time without symptoms of sleeplessness and with his congestive failure under control.

CASE 3.—A man aged 65, a lawyer, was first seen by us in October 1941, eight months after a typical myocardial infarction. He had no cardiac complaints at that time. Examination showed slight cardiac enlargement and a slight aortic systolic murmur. The blood pressure was 160 mm. systolic and 100 mm. diastolic at a pulse rate of 72. There was no evidence of congestive failure. Fluoroscopy of the chest confirmed the presence of slight cardiac enlargement without evidence of pulmonary congestion. An electrocardiogram showed evidence of an old anterior myocardial infarction. A diagnosis was made of coronary heart disease and a healed myocardial infarct.

He then remained quite well until February 1944, when he entered the hospital because of restlessness and sleeplessness at night, slight swelling of his ankles and a low grade fever. He had noted some increased exertional dyspnea but stated that he did not have shortness of breath at night. He was, however, more comfortable sitting in a chair or walking about the room. Examination showed increased heart size, pulmonary congestion, hepatic congestion and slight pitting edema of the legs, more pronounced on the right. An x-ray film of the chest confirmed the increased heart size and showed the lung markings to be prominent, suggesting vascular congestion. This episode of congestive failure was probably precipitated by a pulmonary embolus originating from a thrombophlebitis of the right leg, though pulmonary infection could not be ruled out. Treatment was begun with digitalis, ammonium chloride and mercupurin. He had a good diuresis and soon lost the evidence of congestive failure. With this the nocturnal restlessness disappeared, though he did not notice much difference in his breathing.

After discharge from the hospital he remained relatively inactive at home, continuing to have exertional dyspnea but no evidence of congestive failure. Four months later, in June 1944, he was again seen because of insomnia and restlessness at night, symptoms which had disturbed the rest of the family. He preferred to sit up at night but stated that he did not have shortness of breath, as on the previous occasion. Examination showed evidence of congestive failure. Another course of diuretics relieved the congestion and he again slept much better.

In August 1944 congestive failure was again precipitated, this time by ventricular tachycardia without evidence of a recent myocardial infarction. Since that episode he has done poorly, with constant peripheral and occasional pulmonary congestion.

CASE 4.—A man aged 70, a real estate broker, first seen by us in October 1942, was complaining of painful spasms in the epigastrium coming on after eating, but he had no cardiac complaints. Five years before he had been told of the presence of heart disease and had been advised to limit his activities. Examination revealed moderate cardiac enlargement, a loud (grade 4 to 5) harsh aortic and apical systolic murmur, and along the left sternal border a slight early diastolic murmur. There was a systolic thrill over the aortic area. The blood pressure was 170 mm. systolic and 95 mm. diastolic, and the pulse was regular at a rate of 60. There was no evidence of congestive failure. Fluoroscopy of the chest showed a big heart without evidence of pulmonary congestion. His electrocardiogram was abnormal but of no characteristic pattern. A diagnosis was made of aortic stenosis and insufficiency on a calcareous and possibly rheumatic basis.

The patient continued to have no cardiac symptoms until January 1943, when, following a good deal of hard physical work, he began to be bothered almost nightly by a sensation of fullness in the epigastrium and very slight dyspnea, lasting one half to three quarters of an hour. This was relieved when he sat up. Examination showed no changes, and the lungs were clear. Since it was suspected that congestive heart failure was the cause of the nocturnal distress, the patient was digitalized

and instructed to rest. The symptoms soon disappeared and again he slept well.

In April 1943, following a day of hard physical work, the symptoms recurred, especially the epigastric distress, which awakened him at frequent intervals. This was accompanied by only a little dyspnea, which did not bother the patient. He did notice, however, more than his ordinary dyspnea on exertion. Physical examination revealed no significant change, and the lungs were clear. On a program of increased rest his symptoms again improved, and he was able to sleep without discomfort.

During the past year and a half he has continued to have insomnia, epigastric distress and slight dyspnea from time to time, usually precipitated by overexertion and relieved by rest and diuretics, and recently by a very low salt diet.

COMMENT

Insomnia as a presenting symptom of pulmonary vascular congestion has been generally neglected, because obvious dyspnea, orthopnea or Cheyne-Stokes respiration is usually also present and dominates the clinical picture. Insomnia may, however, be an early and predominant symptom of pulmonary congestion due to left ventricular failure, in cases in which dyspnea is not a prominent complaint. In these cases the insomnia is likely to be misjudged as a symptom of heart failure and ascribed to some other cause. Especially is this true in the absence of basal rales. The insistence of the patient on sitting up, which is evidence of ill defined orthopnea, in the presence of physical signs of left ventricular weakness (gallop rhythm, pulsus alternans and accentuation of the pulmonary second sound) may lead to a recognition of the etiology of the sleeplessness.

Thus it behooves the physician dealing with patients who show features of strain on the left ventricle, namely hypertension in particular, aortic valve disease (stenosis or regurgitation) and extensive myocardial infarction, acute or chronic, to be constantly on guard to watch for early dyspnea, either on effort or as a cause of insomnia, so that adequate treatment may be speedily prescribed to combat the left ventricular weakness and failure which are responsible. The significance of obvious dyspnea is common knowledge and receives as a rule adequate treatment, but the insomnia is likely to be misinterpreted and vainly or inadequately controlled by hypnotics, often causing a serious delay of days or weeks before the signs of increasing heart failure become so evident that radical or emergency treatment proves necessary. At such later stages of heart failure insufficiency of the right ventricle (as shown by increased systemic venous pressure, liver enlargement and dependent edema) tends to appear, and if such right ventricular failure becomes pronounced the pulmonary congestion, and with it the insomnia, may lessen, but painful liver enlargement may take its place and in its turn also cause some insomnia. Rest and digitalis alone may suffice to control the orthopnea and insomnia of early left ventricular failure, but sometimes it is necessary to resort to diuretics, especially the mercurials, in repeated dosage and to a very low salt diet (which will be the subject of a later communication).

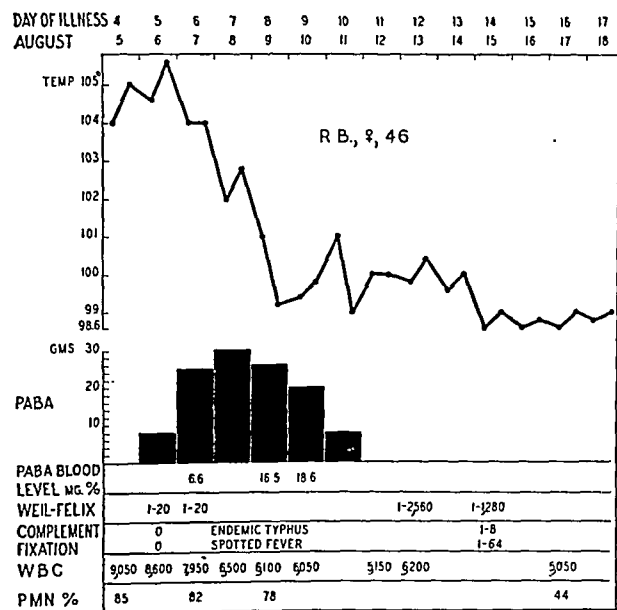
SUMMARY

Insomnia is a frequent symptom of left ventricular heart failure and in some cases is unrecognized as such and therefore inadequately treated because of the tendency to overlook the underlying pulmonary congestion and resulting orthopnea.

THE TREATMENT OF SPOTTED FEVER
WITH PARA-AMINOBENZOIC ACID

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For a long time attempts have been made to find a chemotherapeutic agent of value in rickettsial diseases, and recently such a substance apparently has been found in para-aminobenzoic acid. Snyder, Maier and Anderson¹ were the first to show that the oral administration of this compound would effectively reduce the mortality from experimental murine typhus in white mice, while Hamilton, Plotz and Smadel² found that para-aminobenzoic acid would inhibit the growth of both epidemic and murine typhus rickettsias in the developing hen's egg, thereby prolonging the



Course of illness.

survival time of infected chick embryos. These observations were independently confirmed by Greiff, Pinkerton and Moragues,³ who studied the effects of para-aminobenzoic acid on infections with murine typhus rickettsias in both eggs and mice. The work of all these investigators indicated that para-aminobenzoic acid did not exercise a direct lethal action on the rickettsias but interfered in some way with their proliferation within tissue cells, probably by the modification of as yet unidentified enzyme systems. Moreover, para-aminobenzoic acid alone would produce these effects; substituted compounds and the ortho and meta forms of the drug were entirely inactive.

From the Departments of Medicine and Bacteriology, Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital.
1. Snyder, J. C.; Maier, J., and Anderson, C. R.: Report to the Division of Medical Sciences, National Research Council, Dec. 26, 1942.
2. Hamilton, H. L.; Plotz, H., and Smadel, J. E.: Report to the Director of the United States of America Typhus Commission, Dec. 16, 1943, published as Effect of p-Aminobenzoic Acid on the Growth of Typhus Rickettsiae in the Yolk Sac of the Infected Chick Embryo, Proc. Soc. Exper. Biol. & Med. 58: 255-262 (April) 1945.
3. Greiff, Donald; Pinkerton, Henry, and Moragues, Vincent: Effect of Enzyme Inhibitors and Activators on the Growth of Typhus Rickettsiae: I. Penicillin, Para-Aminobenzoic Acid, and Vitamins of the B Group, J. Exper. Med. 44: 1-10 (1945).

Clinical application of this knowledge was made by Yeomans, Snyder, Murray, Zarafonetis and Ecker⁴ of the United States of America Typhus Commission, who studied the therapeutic effect of para-aminobenzoic acid on human louse borne typhus in Cairo, Egypt. Their results in 20 treated cases, compared with those in 44 untreated controls, indicated that the course of the disease could be favorably modified, provided the drug was given within the first week of the illness. Large doses of the compound, from 24 to 28 Gm. every twenty-four hours, were given orally in order to obtain adequate blood concentrations, which were considered to be between 10 and 20 mg. per hundred cubic centimeters; but no toxic reactions were encountered other than temporary reduction in the leukocyte counts in some cases.

That para-aminobenzoic acid may also be of value in the treatment of rickettsial infections other than typhus fever is suggested by the experiments of Anigstein and Bader,⁵ who found the drug to be very effective therapeutically in guinea pigs infected with Rocky Mountain spotted fever rickettsias. Control guinea pigs inoculated intraperitoneally with the spotted fever rickettsias invariably succumbed, while of those fed para-aminobenzoic acid as 2 per cent of the diet nearly all recovered with few or no signs of illness. Furthermore, Hamilton⁶ has recently reported that para-aminobenzoic acid inhibits the growth of spotted fever rickettsias in chick embryos to an even greater extent than typhus rickettsias.

Since no clinical reports on the use of para-aminobenzoic acid in the treatment of spotted fever in the human subject have yet appeared, we present the following case, in which administration of the drug soon after the onset of symptoms of the disease was followed by rapid and uneventful recovery.

REPORT OF CASE

History.—R. B., a white American woman aged 46, a housewife, was admitted to the Presbyterian Hospital on Aug. 5, 1945 with complaints of malaise and fever of three days' duration, headache of two days' duration and a rash which appeared on the day of admission.

The past history was irrelevant to the present illness. Nine days before admission, after a day spent in central Long Island, N. Y., the patient discovered a tick firmly attached to the left buttock. The insect was removed with difficulty, and a small pustular lesion developed at the site of attachment. Three days before admission she noted the onset of generalized malaise, with muscular aches and pains, and she had a shaking chill. The following day anorexia developed, with mild nausea, feverish sensations and a constant, throbbing retro-orbital headache that became progressively more severe. She also became drowsy and a little disoriented. On the day of admission a spotted skin eruption first appeared on the lower part of the left leg.

On entry to the hospital the temperature was 104.4 F., the pulse rate 120, the respiratory rate 24 and the arterial pressure 120/70. The patient, who was well developed and nourished, did not appear to be in acute distress. Scattered over the body, but especially on the extremities and the palms of the hands, was a pinkish macular rash which blanched easily on pressure. The individual cutaneous lesions were discrete and averaged about 3 mm. in diameter. There was no enanthem. A small pustule, surrounded by a zone of erythema, was found

4. Yeomans, Andrew; Snyder, J. C.; Murray, E. S.; Zarafonetis, C. J. D., and Ecker, R. S.: The Therapeutic Effect of Para-Aminobenzoic Acid in Louse Borne Typhus Fever, J. A. M. A. 126: 349-356 (Oct. 7) 1944.
5. Anigstein, Ludwik, and Bader, M. N.: Para-Aminobenzoic Acid—Its Effectiveness in Spotted Fever in Guinea Pigs, Science 101: 591-592 (June 8) 1945.
6. Hamilton, H. L.: Effect of p-Aminobenzoic Acid on Growth of Typhus Rickettsiae in the Yolk Sac of the Infected Chick Embryo, J. A. M. A. 126: 220-226 (June) 1945.

on the left buttock at the site of the tick bite. The remainder of the examination was essentially negative. The heart and lungs were not remarkable. The abdomen was soft and the spleen could not be palpated. There was no lymphadenopathy. The reflexes were intact.

The admission diagnosis was Rocky Mountain spotted fever. Laboratory examinations revealed hemoglobin 13.5 Gm., erythrocytes 5,030,000, leukocytes 9,050, with polymorphonuclears 85 per cent, lymphocytes 11 per cent and monocytes 4 per cent. The urinalysis was negative except for a heavy trace of albumin. The Kline test was negative. Two blood cultures remained sterile. Cultures of the nose and throat failed to reveal either hemolytic streptococci or meningococci. Stool cultures yielded no enteric pathogens. The Widal test, with *Salmonella* group A, B, C and D antigens, was negative.

Weil-Felix agglutinative tests with *Proteus* OX19 on August 5 and 6, the fourth and fifth days of the illness, were both positive in a titer of only 1:20. On August 13, however, the titer had risen to 1:2,560, and on August 15 the titer was 1:1,280.

Serums were submitted to Dr. I. A. Bengtson⁷ at the National Institute of Health, Bethesda, Md., for complement fixation tests with specific rickettsial antigens. Dr. Bengtson reported that serum drawn on August 6 gave negative complement fixation reactions with both murine typhus and spotted fever antigens, while serum taken on August 15 gave positive reactions in dilutions of 1:8 with the typhus antigen and 1:64 with the spotted fever antigen.⁸

Guinea pigs inoculated intraperitoneally with whole blood taken on the fifth day of illness developed characteristic febrile reactions, transmissible in series, and rickettsias were demonstrated in the yolk sacs of developing hen's eggs inoculated with whole blood and plasma taken the same day.

Course.—Throughout the first two days of the patient's stay in the hospital a high sustained fever ranged to 105.8 F., as illustrated in the chart, and she was drowsy and irritable. During this period the rash became more pronounced and hemorrhagic in character, and on the second day there was a small epistaxis.

Thirty-six hours after admission therapy was started with para-aminobenzoic acid, 4 Gm. initially and then 2 Gm. in 25 cc. of chilled 5 per cent sodium bicarbonate every two hours. The drug caused some nausea, necessitating omission of occasional doses, and therefore the individual dose was raised to 2.5 Gm. the following day, during which 25 Gm. was given. Treatment was continued for four days subsequently, the total daily intake being 30, 26, 20 and 8 Gm. respectively.

Blood levels of the drug were calculated by a method used for the determination of sulfonamides and were 6.6, 16.4 and 18.6 mg. per hundred cubic centimeters on the second, fourth and fifth days of treatment.

Following the first twenty-four hours of therapy with para-aminobenzoic acid clinical improvement was evident and continuous, with a rapid decline of fever and alleviation of headache, drowsiness and irritability. The rash quickly subsided and was almost inapparent by the end of the first week. No fresh physical signs appeared except for a palpable spleen tip noted from the fifth to the eighth day.

On the whole, the drug was well tolerated and produced no toxic effects other than perhaps a moderate depression of the leukocytes noted during convalescence.

Ten days after entering the hospital the patient was entirely asymptomatic, and her subsequent course was uneventful. She was discharged three weeks after admission.

COMMENT

The history of tick bite, the clinical manifestations of the disease, the results of the serologic tests and the recovery of the etiologic agent leave no question that the patient suffered from Rocky Mountain spotted fever. This disease is sometimes fatal, often severe, and usually pursues a febrile course for at least ten

days.⁹ The administration of para-aminobenzoic acid in amounts sufficient to give blood levels as high as 18.6 mg. per hundred cubic centimeters of a diazotizable substance¹⁰ was closely followed by a precipitous drop in temperature and a rapid defervescence of signs and symptoms. Although we cannot conclude from a single case that these effects were directly attributable to the drug, their relationship suggests that such was the case. Further reports on the use of para-aminobenzoic acid in the treatment of spotted fever will doubtless be forthcoming from other sources where opportunities to observe the disease occur more frequently than in the city of New York.

SUMMARY

A case of Rocky Mountain spotted fever was treated with para-aminobenzoic acid. The results suggest that the drug exercised a beneficial effect on the course of the disease.

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Special Article

OPPORTUNITIES FOR THE MEDICALLY TRAINED IN PUBLIC HEALTH

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NOTE.—This article was prepared especially for THE JOURNAL. It indicates opportunities and responsibilities in the field of public health.—ED.

The nation needs physicians to man its state and local health departments. At this time of demobilization, young medical officers especially are urged to give consideration to useful careers in public health.

A recent survey conducted by the Public Health Service reveals that there are 3,000 full time medical positions in state and local health departments. Nearly 900 of these positions are now vacant. Half of these vacant positions are being held for individuals on leave in the military services. The other half are vacancies without restrictions waiting to be filled by qualified physicians.

These positions call for people with special training in public health. Already the several schools of public health are sensing the increased demand for training which leads to the degree of master or doctor of public health.

The various types of full time medical positions in public health departments include health officers, assistant health officers, epidemiologists, directors of bureaus in the field of tuberculosis and venereal disease control, laboratories, maternal and child health, industrial hygiene and in state supervision of local health administration.

The physician practicing the specialty of public health has for his patient the entire community, whose characteristics are as varied and complicated as the physiologic, anatomic and personality traits of the individual—a patient subject to the same pathologic processes as the individuals who make it up.

The health officer occupies an administrative position directing the work of full and part time physicians

9. *Virus and Rickettsial Diseases*, Cambridge, Harvard University Press, 1940, pp. 853-856.

10. The proportion of the drug converted to para-aminhippuric acid is unknown.

7. Bengtson, I. A.: Applications of the Complement Fixation Test in the Study of Rickettsial Diseases, *Am. J. Pub. Health*, 35:701-707 (July) 1945.

8. A later sample of serum taken on September 4 gave a positive complement fixation reaction in a titer of 1:512 with spotted fever antigen and a completely negative reaction with endemic typhus antigen.

and dentists, public health nurses, public health engineers, health educators, veterinarians, statistical analysts, laboratory people and others. The health officer's task is one of protecting the health of the community as a whole.

With the aid of his staff, the health officer must plan the local health program and decide what needs to be done for community health protection. To do so, he must acquaint himself with the local health problems. He must understand the process of evaluation of health activities and health facilities. He must know the death rates and morbidity rates from different causes. He must become acquainted with rates in other communities that he may interpret the problems in his own community soundly. He must know administration, how to give leadership to his staff and how to get along with people, professional and lay.

His field of operations is only partly medical. It also encompasses engineering and sanitary problems, social problems and research—administrative, laboratory and field.

The health officer must concern himself with securing complete pasteurization of the milk supply. He will have to ferret out the causes of the mysterious occurrence of typhoid or undulant fever. He should be ingenious enough to induce people with tuberculosis to go to and stay in a sanatorium. He may even have to develop community support to provide tuberculosis hospitals. His interest must encompass the cleanliness of dishes in restaurants, the wholesomeness of food supplies, the protection of swimming pools.

He should do something more than wait till a full fledged case of tuberculosis or syphilis is reported. He must find and examine contacts and get them under treatment either with private physicians or in public clinics. He is interested in therapy, but even more he is interested in prevention. He sees to it that young children are adequately protected against diphtheria, whooping cough and smallpox. He encourages starting dental care early in life and continuing it throughout life. This interest is not just academic or passive. His job is to see that people get needed service.

In some areas he will be a hospital administrator as well as direct a health department staff. In anticipation of trends in medical care, he needs to know about administration of the different forms of prepaid hospital and medical care.

He is concerned with the salaries of his staff, with equitable rules for sick leave and vacations, retirements and pensions and in-service training of his staff. He must be considerate, sympathetic, fair and at times stern. He must keep informed and up to date on scientific advances in medicine and public health.

In preventing illness he will have to teach the public, and, to do so himself and have his staff do so, he must be aware of the educational principles of learning. He must be willing to learn from educators and seek and utilize educational advice.

There are satisfactions in being a health officer—different satisfactions from those that come to a general practitioner but still heart warming and real. The health officer doesn't have to get up at 2 a. m. and drive several miles to attend a woman in labor, but he will have to attend some evening meetings and discuss with groups maternal care and child care and numerous other topics.

In wrestling with major health problems and in developing programs to reduce the health hazards of his

community, the local health officer is afforded unusual opportunity for leadership in preventive medicine among the medical profession and the general population. Because of the tangible contributions which he makes to the health and welfare of the area, the enterprising health officer can easily win the esteem and cooperation of all groups regardless of their economic or social status, their religious or political affiliation.

In the military services, approximately 60,000 physicians have been experiencing the financial security of a fixed salary. A similar security is offered in most public health positions. Salaries will range generally from \$4,000 to \$6,000 a year, with no additional personal expense of maintaining an office and equipment and employing a nurse or assistant. In the more important positions, salaries will run above \$6,000 and up to \$10,000 a year. The extension of state merit systems, with their salary classification, promotion and, particularly, retirement or pension plans, and their provisions of liberal annual and sick leave, enhance the feeling of security. Furthermore, with the growth and expansion of public health departments there is increasing recognition of the necessity of salary advancement to attract and hold able people. While public health specialists may not command a salary comparable to the income of the most prosperous practitioners, in general over the years their salaries will compare not unfavorably with the net income of practicing physicians in most communities.

It must not be overlooked also that public health experience is a valuable asset to the physician who seeks other fields of service. Private associations, business and industry frequently are on the lookout for persons with these qualifications at even more attractive salaries than those mentioned.

In other positions than that of health officer, medical men with public health training will plan and direct special services for the larger health departments—tuberculosis, venereal diseases, child hygiene and the like. This will provide a closer contact with the clinical field and with hospital service. But it will also call for administrative duties and teaching experience.

How does a young medical man or woman enter the field of public health? Let us follow the main highway, the most desirable route to pursue, recognizing that there are bypaths and shortcuts which are necessary for some who are unable to take the full journey, or are permissible for others who have already made part of the trip in previous public health experience.

The approved route through training to a full-fledged job starts with an orientation course in a state or local health department. Here for six months to a year the young candidate works and is paid by the health department as a health officer or epidemiologist in training, or as a junior health officer. Different titles are used in different states. The position is a subordinate one without administrative responsibility but with a chance to see and feel what goes on in a health department. Assignment may be in a tuberculosis clinic or as an assistant to an epidemiologist in the field. The assignment may be changed several times during the training period.

This orientation course or "trial flight" is designed for two purposes, to permit the candidate to decide whether he really likes this field of work and wants to continue, and to permit the employer to decide whether the candidate has the stuff in him to make a good health officer and whether he is worth a further investment in training.

At the successful conclusion of this period, the candidate would enter an accredited school of public health in the fall term for his academic training. At the end of eight or nine months, again if successful, he would receive a degree of Master of Public Health. He would then be assigned to a field training center for a period of three months to a year. This would be a selected local health department, equipped to provide individual attention to the student. Here, as an assistant health officer and under guidance, he would receive practical field experience. He would carry responsibility.

At the end of this period he would be appointed to a regular position as health officer in a smaller community or assistant health officer in a larger community. He is now launched on a public health career.

Young medical graduates who desire to enter the public health field, on leaving the military services, have several paths open to them. Application for training may be made directly to a school of public health. Ordinarily the course begins in the autumn term, and arrangements should be completed from three to six months ahead of time. The schools are experiencing increased registrations, and their facilities are limited. However, to meet the present emergency they have expressed a willingness to adjust their program accordingly and will admit a few students during the term or at the beginning of the second term around February 1.

Another procedure is to write to the state department of health in the capital city of the state of residence. Owing to the pressing need for medical men, an appointment may be secured for the time being, with training in a school of public health to follow later.

Physicians previously employed in state or local health departments should of course get in touch with their former employer and request training at the first convenient opportunity.

The schools within the group known as the Association of Schools of Public Health are eight in number and are located at Columbia University, New York; Harvard University, Boston; Johns Hopkins University, Baltimore; University of Michigan, Ann Arbor; University of Minnesota, Minneapolis; University of North Carolina, Chapel Hill; Vanderbilt University, Nashville, Tenn., and Yale University, New Haven, Conn.

Physicians leaving the military service who can qualify are entitled to financial aid in training under the G. I. Bill of Rights. This provides from \$50 to \$75 a month subsistence allowance and up to a maximum of \$500 a year for tuition and university fees. Application for these aids should be taken up with the educational counselor at the camp or separation center or may be made directly to the manager, Veterans Administration, at the nearest state office.

For those unable to meet the cost of professional training on these allowances, state funds are available under the federal grants-in-aid. These funds are granted to employees of state and local health departments, and application should be made to the local health officer or directly to the state department of health.

In some instances where state funds for training are not available, applicants may write to the Professional Training Unit, Division of Public Health Methods, U. S. Public Health Service, Bethesda 14, Md. Every effort will be made to place applicants in touch with some of the foundations having fellowships available.

While the foregoing description has focused on the induction of medical people into public health training,

it should be remembered that training with financial aids as described is likewise open for dentists, public health engineers, public health nurses, statistical analysts, laboratory workers, health educators, veterinarians and others whose qualifications are adequate and who wish graduate training in preparation for a career in public health.

The war has dramatically demonstrated what consistent application of the principles of public health by trained personnel can do in maintaining the health of the population. In the postwar period the same high quality of public health service must be maintained and extended so that we may realize the high level of health we in America seek for all our people. That objective is a challenge to all those whose ideals are a career of service for the welfare of their fellow men.

Clinical Notes, Suggestions and New Instruments

ACTINOMYCOTIC GRANULOMA OF THE STOMACH

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AND

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The stomach is a rare site for *Actinomyces* to gain a primary foothold. While the fungus is known to be of relatively low pathogenicity, once a port of entry is established the infection is very tenacious, and a granulomatous lesion results. Intestinal actinomycosis is well known. Two factors could be conducive to its relatively frequent occurrence in the appendix and the large intestine: stasis, and the common presence of mucosal imperfections. The stomach offers only one of these conditions commonly—mucosal defects. Hypothetically, the most favorable circumstances for the development of gastric actinomycosis might be the simultaneous presence of mucosal defects and viable *Actinomyces* in the stomach content or the production of mucosal defects by the ingestion of infected roughage.

The literature contains few case reports of primary gastric actinomycosis. Blain¹ presented briefly a review of the United States and European literature in 1933 and reported a case of primary actinomycosis of the stomach. He concluded that his was the first case of this type to be presented in the medical literature of this country. Quoting the review of the European literature by Nathan,² Blain stated that only 1 of the 6 cases reported there survived strict diagnostic scrutiny.

In the case reported by Blain¹ the symptoms, the roentgenologic studies and the gross and microscopic appearance of the gastric granuloma were strikingly similar to the case reported here; however, Blain's patient had metastatic lesions of the liver and died six months after gastrectomy.

REPORT OF CASE

History.—A man aged 48, a loom fixer, had been examined in a nearby hospital the week before admission. He had presented the symptoms of heartburn and occasional eructation and vomiting after eating. Those symptoms had been active over a period of five years, and their frequency had recently increased. A weight loss of 20 pounds (9 Kg.) occurred during the course of the complaints. The only positive physical finding was some spasm in the right upper quadrant. Roentgenologic examination of the gallbladder showed no evidence of disease. Gastrointestinal examination revealed that, radiologically, the stomach was normal in size and position. A constant deformity involved

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This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writers and are not to be considered as reflecting the policies of the Navy Department.
1. Blain, A. W.: Primary Actinomycosis of the Stomach: Report of Case. *J. A. M. A.* 100: 100, 1933.
2. Nathan, H.: Primary Actinomycosis of the Stomach. *Virchows Arch. f. path. Anat.* 273: 480-495, 1902.

the midportion of the lesser curvature. It appeared as a diverticulum, which could be the result of a penetrating ulcer or an old walled-off perforation. The stomach emptied in six hours, but barium persisted in the diverticulum. The intestine showed no abnormalities. The patient went home for a few days to consider operation.



Fig. 1.—Large deformity in pars media, apparently a deep penetrating ulcer on the lesser curvature.

At this hospital, to which he was admitted Jan. 16, 1942, the man gave a history of four attacks of pain beneath the left ribs during the past three years. Loss of appetite and vomiting two or three times daily lasted for a week. Burning pain under the left costal margin radiated to the left scapula and was relieved by vomiting. The vomitus was acid and yellow. Hematemesis and melena were absent. The bowels had been regular except for constipation during the attacks. The usual weight was 190 pounds (86 Kg.). Before the last attacks the weight was 172 pounds (78 Kg.). No treatment had previously been sought for these attacks.

The symptoms which initiated the present hospital studies consisted of heartburn followed by burning pain beneath the left costal margin two to three hours after meals and at about

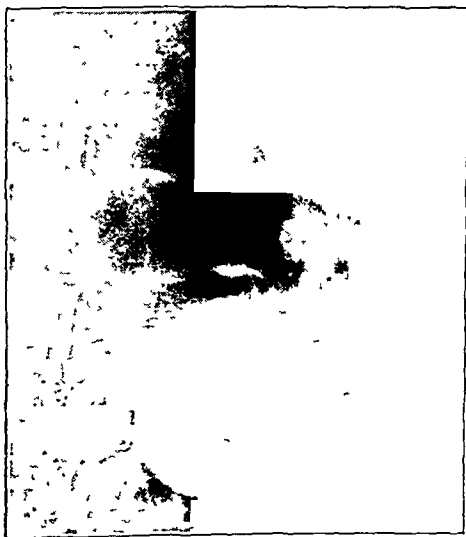


Fig. 2.—Appearance one month later, showing two separate lesions, a penetrating ulcer of the lesser curvature, just below the cardiac opening, and a persistent prepyloric deformity, suggesting a second ulcer.

4 a. m. The pain was relieved by food and at times by eructation. For the first two or three days of the attack the pain was also relieved by vomiting.

Physical Examination.—Few abnormalities were noted. The patient was tall, appeared to be undernourished and weighed 144 pounds (65 Kg.). The tongue was coated. The blood pres-

sure was 104/72. The liver edge was palpable two finger-breadths below the right costal margin in the midclavicular line. No other pertinent findings were discovered.

Laboratory Examination.—Urinalysis was normal. A microcytic anemia of moderate degree was present. The blood non-protein nitrogen was 56 mg. per hundred cubic centimeters on one occasion. The feces contained occult blood while the patient was on a modified Sippy diet. The blood Kahn test was negative.

Roentgenologic examinations were made by Dr. E. F. Merrill. On Feb. 19, 1942 fluoroscopic examination of the esophagus revealed no evidence of disease, but there was a very large deformity of the pars media of the stomach apparently as the result of a deep penetrating ulcer on the lesser curvature. This is best shown on a film which was made at the time of the fluoroscopic examination (fig. 1). About 3 ounces of the opaque mixture was still in the stomach at the end of six hours. On March 18 examination of the stomach showed fluoroscopic evidence of two separate lesions, mainly a penetrating ulcer of the lesser curvature just below the cardiac opening, which now showed up well on the film (figs. 2 and 3). A persistent deformity in the prepyloric region indicated the possibility of a second ulcerative lesion in that position. No gastric retention was noted, and no sign of duodenal or small bowel lesion was seen. On March 25 a third examination of the stomach with



Fig. 3.—Different view from that presented in figure 2.

films made at the time of the fluoroscopic examination confirmed the finding of two ulcerating lesions in the stomach. They were well shown on films made at the time of the fluoroscopy.

Course.—During a prolonged preoperative course the patient was comfortable, except for occasional abdominal pain. Over a period of three and one-half months he gradually improved. March 30 his weight was 157 pounds (71 Kg.).

April 1 the patient was accepted by the surgical service. A partial gastrectomy was done on April 14. Tumor masses were found in the pars media on the lesser curvature and posteriorly, and high on the lesser curvature. There were adhesions to the left lobe of the liver. A sleeve resection of the stomach was done, including the tumor masses. A posterior gastrojejunostomy, with a short loop, completed the repair of the resection. A drain was left in for six days.

Gross Pathologic Examination.—The specimen consisted of the greater portion of a stomach, which included the pylorus, the pyloric sphincter and most of the lesser curvature. Situated in the posterior aspect of the lesser curvature, 7.5 cm. from the pyloric sphincter, was a disklike mass 5 cm. in diameter and up to 2.5 cm. thick. It produced an outward bulge on the curvature, where the attachment of the lesser omentum was scarred. Viewed from the interior of the stomach, the mass was displaced outward, to produce a broad crater-like surface defect with rounded, overhanging and invaginated margins. In profile it could simulate a double ulceration or a diverticulum. The mucosa which covered the lesion was thin but intact, and it was smooth and devoid of rugae. Sectioning revealed the mass to be gray and of dense fibrous consistency at the periphery, but the central portion was composed of a pale yellow necrotic zone

1.8 cm. in greatest diameter. This zone lay between the mucosa and the serosa, and it interrupted the continuity of the muscularis. The serosa was not penetrated by the necrotizing process.

An extra, narrow strip of the stomach also was submitted. Scarred fatty omentum was attached to the serosa. The stomach wall was intact, but within the fat were two small, pale brown lymph nodes.

The gross opinion was that inflammatory granuloma of the stomach existed, with a question of tuberculosis.

Microscopic Examination.—The mass in the stomach wall was composed of a granulomatous inflammatory lesion which contained ramifying abscesses filled with compact purulent exudate. In several sections from different blocks of the tissue there were large and small colonies of ray fungus in the purulent exudate. Dense granulation tissue and fibrous tissue surrounded the abscesses, and this tissue was densely infiltrated with a variety of leukocytes. In the granulation tissue eosinophils and multinucleated giant cells were prominent. The two lymph nodes were embedded in fibrous tissue. The lymphoid tissue was hyperplastic but did not show any active inflammatory reaction (fig. 4).

The pathologic diagnosis was actinomycosis of the stomach wall.

Postoperative Course.—There was slight drainage from the site of the drain, but the sinus was entirely healed at the end of one month. Smears from the drainage showed no actinomyces colonies. The patient was discharged May 26, 1942, six weeks after operation (fig. 5).

Follow-Up Examination.—On Sept. 8, 1943, fifteen months after discharge from the hospital, the patient returned for a check-up. He stated that he had been in perfect health since

The patient appeared to be in good health. Urinalysis showed no abnormalities. The red blood corpuscle count was 4,650,000, the leukocyte count 11,400 and the differential count was normal (bands 1, segmented 74, lymphocytes 23, eosinophils 1, monocytes 1). Stereoscopic posteroanterior films of the chest showed no evidence of disease.

The patient is considered to be cured.



Fig. 5.—Appearance of stomach six weeks after resection, showing good function of gastrojejunostomy.

SUMMARY

Fifteen months after partial gastrectomy for actinomycosis of the stomach the patient was in good health and showed no evidence of extension of the disease. The lesion is considered to be primary in the stomach because of no evidence of pulmonary, upper alimentary tract or intestinal involvement. We believe that this case is probably the only one on record of cured primary gastric actinomycosis.

COMPLICATION ARISING FROM USE OF VITALLIUM TUBE FOR COMMON DUCT REPAIR

RALPH B. BETTMAN, M.D., AND WILLIAM J. TANNENBAUM, M.D.
CHICAGO

One of the difficulties we found in using rubber tubing for repairing defects in common duct injuries was that if the tubes did not pass in a short time they were apt to become plugged with a deposit from the bile. When vitallium tubes came into use we hoped that because of the properties of the metal and because of the shortness of the tube this would not occur. However, a few months ago we found it necessary to remove the first vitallium tube we had used because of biliary obstruction and were disappointed to note that the cause of the obstruction was a thick plug of deposit in the tube.

The history of the patient, a man aged 40, is that he had been operated on for gallstones about a year before we saw him. The surgeon when questioned did not think that he had injured the common duct but did say that the patient drained bile from the abdominal wound for many months after operation and that as the drainage ceased the patient became jaundiced. We operated on him after he had been jaundiced for at least six



Fig. 4.—Section showing portion of abscess in stomach wall, which contains a large and a small actinomyces colony. The surrounding vascular scar tissue is infiltrated with a variety of leukocytes. This scar tissue accounts for the bulk of the inflammatory granuloma. Hematoxylin and eosin.

discharge and had gained 45 pounds (20.4 Kg.). After three months' convalescence he returned to work and had worked steadily. He had abstained from fried foods; he found that cucumbers disagreed with him, but he had had no other dietary trouble.

months; at the time he had a complete obstruction. At operation we easily picked up the dilated proximal part of the common duct and then—not so easily—the distal portion. The two seemed to be separated by about $\frac{1}{2}$ inch of firm scar tissue. We reunited the common duct over an inch long vitallium tube. The patient's jaundice cleared gradually until he appeared normal and had a low icterus index. Then about six months after our operation he became jaundiced again and it was evident that he had another obstruction whether from a stone or from a plugging of the vitallium tube we did not know. We operated on him again, opened the common duct and removed the vitallium tube. The vitallium tube was firmly plugged for its entire length with a thick greenish deposit resembling the deposit which we had seen from time to time previously in the rubber tubes. The common duct otherwise was patent and a pale bile colored fluid gushed from the proximal end. We implanted the proximal end of the common duct into the duodenum, and the patient made an uneventful convalescence with rapid subsidence of the jaundice.

SUMMARY

A biliary obstruction occurred as the result of the plugging of a vitallium tube used in repair of an injured common duct. Judging from the literature this does not always occur, but the fact that it did occur in this case shows that plugging of a vitallium tube may be a possible objection to its use.

104 South Michigan Avenue.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. HOWARD A. CARTER, Secretary.

ULTRAVIOLET LAMPS FOR DISINFECTING PURPOSES

PRESENT STATUS

W. W. COBLENTZ, PH.D., D.Sc.
WASHINGTON, D. C.

The "Regulations of Acceptance of Ultraviolet Lamps for Disinfecting Purposes"¹ adopted and used by the Council on Physical Medicine have been in force a sufficient time to show that they serve a useful purpose in securing and maintaining a high standard of performance of ultraviolet germicidal lamps.

In my opinion the Council acted wisely at the outset by placing the responsibility on the lamp manufacturer and the distributor for the adequacy of the lamp installation for purposes of radiant disinfection of the air and for the adequacy of the protection from injury of the occupants of the space irradiated.

With the use of ultraviolet disinfecting lamps in their fixtures, as now made and attached to the side walls of schoolrooms, two types of avoidable injury have recently come to my attention. The first type of injury consisted of conjunctivitis and erythema, caused by the ultraviolet rays reflected by the lamp fixture horizontally across the schoolroom into the face of a person standing on the rostrum. Obviously, with a little forethought, this could have been avoided by installing the lamp fixture at a higher elevation or by adjusting the lower edge of the reflector so that the rays could not shine into the face of a person standing anywhere in the room.

The second type of injury reported to me consisted of burns by ultraviolet radiation reflected from the ceiling of a schoolroom on the bald head of the teacher

as well as on that of the investigator who made the ultraviolet intensity measurements. In this case the lamp fixture was of the type made to project the ultraviolet rays vertically (thus impinging on the ceiling) as well as horizontally; and, since the ceiling was made of sound-proofing material that allegedly could not be painted with a material having a low reflectivity of ultraviolet radiation, the intensity at the level of the top of the head of a person standing erect was sufficient to cause erythema and burns. In both cases the intensity of ultraviolet radiation, at the location in the rooms where the injury was reported, was much higher than the maximum permissible value specified by the Council. It is gratifying to know that in both of these instances remedial action was taken. Obviously if the lamps had been properly installed and measurements of intensities of diffusely scattered ultraviolet radiation had been made before occupancy of the room, these injuries would not have happened.

In addition to the aforementioned types of injury is the slow photochemical action caused by low intensity ultraviolet radiation on the skin, producing desquamation of the epidermis of some of the nurses and infants, reported in the Council's "Acceptance."¹ This was remedied by painting the walls and ceiling with a decorative, light blue paint that absorbed these rays. Incidentally it is relevant to note that many paint vehicles (also drapes, wall paper and the like) will be burned brown by ultraviolet rays.

The Council's specification of maximum acceptable intensities of ultraviolet radiation incident on an occupant of a room is based on my radiometric measurements in the aforementioned nursery after it was painted. Of course there has been a wall that the Council's maximum values of acceptable intensities are not "sacred." However, from my contacts with people in nurseries equipped with disinfecting lamps I am fully convinced that the Council's specification of an intensity of ultraviolet radiation of wavelength 2,537 angstroms not exceeding 0.5 microwatt per square centimeter ($0.5 \mu\text{W}/\text{cm}^2$) incident on an occupant for seven hours or less, and not exceeding 0.1 microwatt per square centimeter incident for twenty-four hours a day, is a fair and reasonable requirement that should remain unchanged. This is substantiated by the aforementioned measurements of intensities of ultraviolet reflected from the schoolroom ceiling, amounting to only about four times the Council's specified value (0.5 microwatt per square centimeter) for an occupancy of not longer than seven hours. Nevertheless erythema was caused, showing the low margin of safety that prevailed before the lamp fixture was modified.

The Council's requirements for acceptability of ultraviolet disinfecting lamps (that the concentration of ozone near the occupants of the room shall not exceed one part in ten million) should continue in force.

A recent improvement in germicidal lamps consists in the use of a glass that is highly transparent to the powerful emission line at 2,537 angstroms and is practically opaque to wavelengths shorter than about 2,300 angstroms that generate ozone. This improvement in lamp construction is a tacit recognition of the importance of preventing the generation of ozone by germicidal lamps. Since certain of these lamps do not generate ozone, or at least generate less ozone than other lamps, this could be regarded as an advance in sanitary ventilation.

About three decades ago an elaborate attempt was made to disinfect water on a large scale by ultraviolet

lamps, using hot quartz mercury arc lamps. The presence of suspended matter made ultraviolet radiation an uncertain method of sterilizing water. With the advent of the low vapor pressure, mercury arc germicidal lamps the proposal to sterilize water, particularly individual water supplies (canteens), has been again revived. Laboratory tests show that while cysts of *Endameba histolytica* can be killed by radiation from a low pressure mercury arc (wavelength 2,537 angstroms) lamp, since the effectiveness of such radiation depends on the depth and turbidity of the water, there is no evidence of the practicability of using this method as an adjunct in the sterilization of drinking water. Hence, the point of view expressed in the Council's "Acceptance"¹ regarding the sterilization of solids and of liquids (water) does not require modification.

The outstanding perennial problem is the prevention of classroom air borne spreading of childhood contagions (chickenpox, measles, mumps) and colds by the killing action of ultraviolet radiation, using the newly developed germicidal lamps. The uncertainty of the effectiveness of ultraviolet radiation in preventing colds seems about as great at this date as it was some two decades ago when irradiation of the body with "hot quartz" mercury arc lamps was tried.

There are several reasons for this uncertainty: (1) "the futility of trying to stop colds among school children by irradiating only their classrooms,"² because their surroundings cannot be controlled while they are not in the classroom, and (2) the total intensity of germicidal radiation emitted by each lamp in its fixture, and the total number of lamp units used must exceed a minimum value in order to be effective in reducing cross infection, as noted in the Council's "Acceptance."¹ This is shown conclusively in the studies carried out at the U. S. Naval Training Center, Sampson, N. Y., where observations were made on large groups of recruits housed in barracks that were (1) irradiated with high intensity germicidal lamps, (2) alternate barracks having low intensity germicidal lamps and (3) barracks used as controls in which there were no germicidal lamps.

The results of this investigation,³ which extended over a period of six months (December to May) are impressive and instructive in showing that the incidence of respiratory illness in the barracks irradiated with low intensity ultraviolet lamps followed the same undulations that occurred in the adjacent control barracks, whereas in the barracks irradiated with a high intensity there was a definite reduction in the incidence of respiratory illness—a reduction estimated at 25 per cent for the entire period of observation of respiratory illness in the high intensity irradiated group as compared with the control group, "and not due to chance." Hence, while ultraviolet radiant disinfection of air can be substituted for actual air displacement in reducing cross infection in chickenpox, measles and mumps,⁴ and with less certainty in reducing the incidence of colds, there is no evidence that will justify high pressure sales promotion of ultraviolet disinfecting lamps as a cureall or sureshot preventive of respiratory illness. Disinfection by ultraviolet radiation can serve a useful pur-

pose, but it has its limitations. In this connection it is a satisfaction to record that at least one manufacturer is issuing to its salesmen and distributors a printed guide setting forth factual information regarding ultraviolet disinfecting lamps and some of their shortcomings. Whether this is for self protection (because an "employer need not ask an employee to cheat for him," as the vice president of one large lamp manufacturing concern once remarked to me, years ago) or for altruistic reasons, the booklet should serve a useful purpose in guiding overenthusiastic salesmen as well as the consumer.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods

GEORGE K. ANDERSON, M.D., Secretary.

PREPARATIONS USED IN THE FEEDING OF INFANTS (See Accepted Foods, 1939, p. 156)

Campbell Soup Company, Camden, N. J.

CAMPBELL'S STRAINED BEEF BABY SOUP, contains beef broth, beef, tomatoes, carrots, sweet potatoes, white potatoes, egg noodles, onions, celery and salt

Analysis (submitted by manufacturer)—Total solids 13.7%, protein 3.91%, fat 0.9%, carbohydrate by difference 7.6%, crude fiber 0.22%, calcium 0.046%, phosphorus 0.068%, iron 0.40 mg. per hundred grams, copper 0.17 mg. per hundred grams, manganese 0.053 mg. per hundred grams

Calories—15 per ounce.

<i>Vitamins</i> —Vitamin A	1,693 I. U. per hundred grams
Thiamine	0.037 mg. per hundred grams
Riboflavin	0.072 mg. per hundred grams
Ascorbic acid	3.9 mg. per hundred grams
Niacin	1.29 mg. per hundred grams

Campbell Soup Company, Camden, N. J.

CAMPBELL'S STRAINED CHICKEN BABY SOUP, contains chicken stock, carrots, chicken, semolina, sweet potatoes, celery, onion, parsley and salt

Analysis (submitted by manufacturer)—Total solids 11.8%, protein 2.63%, fat 1.5%, carbohydrate by difference 6.4%, crude fiber 0.15%, calcium 0.026%, phosphorus 0.042%, iron 0.22 mg. per hundred grams, copper 0.24 mg. per hundred grams, manganese 0.075 mg. per hundred grams

Calories—14 per ounce

<i>Vitamins</i> —Vitamin A	1,766 I. U. per hundred grams
Thiamine	0.018 mg. per hundred grams
Riboflavin	0.040 mg. per hundred grams
Ascorbic acid	1.1 mg. per hundred grams
Niacin	0.77 mg. per hundred grams

Campbell Soup Company, Camden, N. J.

CAMPBELL'S STRAINED LAMB BABY SOUP, contains lamb stock, sweet potatoes, white potatoes, carrots, barley, onions, celery and salt

Analysis (submitted by manufacturer)—Total solids 13.9%, protein 3.09%, fat 2.1%, carbohydrate by difference 7.2%, crude fiber 0.30%, calcium 0.046%, phosphorus 0.068%, iron 0.35 mg. per hundred grams, copper 0.12 mg. per hundred grams, manganese 0.054 mg. per hundred grams

Calories—17 per ounce.

<i>Vitamins</i> —Vitamin A	1,130 I. U. per hundred grams
Thiamine	0.036 mg. per hundred grams
Riboflavin	0.068 mg. per hundred grams
Ascorbic acid	2.7 mg. per hundred grams
Niacin	1.22 mg. per hundred grams

Campbell Soup Company, Camden, N. J.

CAMPBELL'S STRAINED LIVER BABY SOUP, contains liver broth, tomatoes, carrots, white potatoes, sweet potatoes, beef liver, oatmeal, peas, onions, celery and salt

Analysis (submitted by manufacturer)—Total solids 13.3%, protein 3.42%, fat 0.9%, carbohydrate by difference 7.5%, crude fiber 0.29%, calcium 0.013%, phosphorus 0.065%, iron 0.72 mg. per hundred grams, copper 0.35 mg. per hundred grams, manganese 0.173 mg. per hundred grams

Calories—15 per ounce

<i>Vitamins</i> —Vitamin A	7,000 I. U. per hundred grams
Thiamine	0.050 mg. per hundred grams
Riboflavin	0.062 mg. per hundred grams
Ascorbic acid	7.3 mg. per hundred grams
Niacin	1.54 mg. per hundred grams

2. Wells, W. F.: Measurement of Air Borne Infection by the Disinfection of Air, *Am. J. M. Sc.* 209:177-180, 1945. Wells, W. F.; Wells, Mildred W., and Wilder, T. S.: *Am. J. Hyg.* 35:97-121, 1942.

3. Wheeler, S. M.; Ingraham, H. S.; Hollaender, A.; Gersthor Cohen, J., and Brown E. W.: Ultraviolet Light Control of Air Borne Infections in a Naval Training Center, *Am. J. Pub. Health* 35:457-468, 1945.

4. Wells, Mildred Weeks: Ventilation in the Spread of Chickenpox and Measles Within School Rooms, *J. A. M. A.* 129:197-209 (Sept. 15) 1945.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, DECEMBER 22, 1945

THE TERM "DOCTOR" IN AMERICA

Dr. Edward M. Repp of Philadelphia has a question for the medical Emily Post. His daily work requires occasional conferences with his druggist and also with the head of a laboratory who examines specimens. Should he address these associates as doctor or mister? In the neighborhood where he resides are also an osteopath, a chiropractor and a chiropodist. These too he meets occasionally while en route on his medical tasks; he never knows whether to say "doctor" or something different. A similar question disturbed Hugh J. McDonald,¹ who discussed the subject not long ago in the *Journal of Higher Education*. A survey of the graduate degrees awarded by the colleges and schools of New York State during 1937 reveals thirteen types of doctors' degrees awarded during the year. The term "doctor," originally the equivalent of teacher or instructor, according to McDonald, seems to have originated among the Romans, who applied it to any one who delivered public lectures or addresses on philosophic subjects. Later in the twelfth century the term was a title of honor borne by men of learning. It was first made an academic title at the University of Bologna in Italy, which received from the emperor the right of appointing *doctores legum* (doctors of laws). The University of Paris followed in 1145. Then the popes granted the universities the right of appointing *doctores canonum et decretalium* (teachers of the canon law). Eventually the study of civil law was combined with canon law, and the title was changed to *doctor utriusque juris* (teacher of both laws). The faculties of theology and medicine followed in conferring the title, but it had been in use for two and a half centuries in other fields before it was conferred in medicine.

The degree of doctor is now conferred in so many areas of learning that the result is confusion. McDonald feels that the conferring of the doctoral degree is in need of a thorough house cleaning. The degree of doctor

of philosophy (Ph.D.) is granted for three years of full time study and examination and the preparation of a thesis following the bachelor's degree. The degree of doctor of science (D. Sc.) is granted for an identical program when the major part of the work is in science. Many times in education, history, literature, economics, sociology and natural sciences the Ph.D. seems to be granted for meeting a standard of mediocrity. Some of the titles of theses have become the butt of humorous remarks, a typical example being a thesis on "The Length of Sentences in Spenser." The conclusion of this important thesis, which was three hundred pages long, was that the sentences in Spenser were of three types—long, short and those which could not accurately be described as either "long" or "short."

As McDonald points out, in the field of ill health the assortment of doctorates now includes the degree of naprapathy, which can be had in ninety days without any entrance requirements; doctor of chiropractic in from one to four years, depending on the school, with the minimum entrance requirement usually just an elementary school education; doctor of surgical chiropody in from eighteen months to three years, with an entrance requirement like that of chiropractic; doctor of optometry three to four years after high school graduation; doctor of osteopathy a minimum of four years, with one year of college work as prerequisite; doctor of public health, with as yet little standardization and, incidentally, available to graduates in bacteriology or related fields after three years' study. McDonald believes that some of these people have about as much legitimate claim to a doctor's degree as would a hotel dishwasher to a D.D.W. Then there are also doctors of medicine, doctors of dental medicine, doctors of veterinary medicine and doctors of dental surgery with better standardized requirements.

The confusion among degrees granted in the field of law is apparent when one remembers that lawyers can get the degree of Bachelor of Laws (LL.B.), Doctor of Jurisprudence (J.D.), Master of Laws (LL.M.) and Doctor of the Science of Jurisprudence (S.J.D.). Each year about a thousand honorary degrees are awarded with Doctors of Laws, of Humane Letters, of Science and of Engineering. The spurious degrees in the field of theology are equally a problem.

Educational authorities might well consider the desirability of some standardization in this area so that the degree of doctor, regardless of the field of learning in which it is applied, will have real significance. Furthermore the public should be able to determine from a title the actual qualifications of the man who adorns himself with it. Finally, the economists who devote themselves to propaganda for revolutionizing medical care persistently trade on their doctor of philosophy degrees and thus perpetrate a fraud on the public, who take it for granted that these "doctors" are physicians.

1. McDonald, Hugh J.: The Doctorate in America, *J. Higher Education* 14: 189 (April) 1943.

CANCER AND CALORIC RESTRICTION

The role of nutrition in cancer has received much attention, since both the developing cancer cell and the growing tumor must obtain sustenance from the metabolic pool of the body. Tannenbaum¹ demonstrated that underfeeding—restriction of the ad libitum intake by approximately one third—invariably caused a significant reduction in the incidence of tumors in mice. This inhibitory effect on tumor formation was noted with all four types of tumors studied—spontaneous mammary carcinoma, spontaneous lung tumor, induced carcinoma of the skin and induced sarcoma—suggesting that many types of tumors respond in a similar manner. Furthermore, the tumors of the underfed groups appeared, on the average, later than those of the full-fed groups. While the reduction in food intake to about two thirds of the normal intake seems drastic, the underfed mice appeared healthy and in general lived longer than the controls.

Tannenbaum suggested that the inhibition of tumor formation through underfeeding (all components and caloric content being reduced proportionately) was due mainly to restriction of calories rather than to restriction of some essential component of the diet. In subsequent investigation² only the carbohydrate content of the diet was restricted, while the protein, minerals and vitamins were maintained constant (caloric restriction per se) and yet the nature and extent of inhibition of tumor formation was similar to that observed in the earlier investigations. Visscher and his associates,³ Saxton, Boon and Furth,⁴ White and his associates⁵ and Rusch, Kline and Baumann⁶ confirmed these observations or extended them to other tumors and to leukemia. Thus there seems to be little question that a caloric restricted diet both reduces the incidence of tumors and delays their time of appearance. At least this statement is valid for all tumors so far studied.

Apparently it is not necessary to restrict the caloric intake greatly to inhibit tumor formation. On the basis of experiments in which the caloric restricted diets ranged from approximately 60 per cent to 90 per cent of the ad libitum intake, Tannenbaum⁷ concludes that any degree of caloric restriction may exert some inhibitory effect on the formation of tumors; however,

the lower the caloric intake, the greater the inhibition. Evidence is also presented⁸ indicating that the inhibition is produced principally during the period in which tumors actually appear (developmental stage) rather than in the period of initiation (preparatory stage); that is, the inhibitory effect is obtained even when the caloric restriction is instituted just before tumors are expected to appear.

All these studies relate to the origin or genesis of tumors and not to the growth of a tumor once it has appeared. Although nutrition may be of some value in the prevention of tumors, the evidence suggests that there is little likelihood that it is of practical help in controlling the growth of tumors.

This dependence of the genesis of tumors in mice on the caloric value of the diet would obviously suggest inquiry into its applicability in human cancer. Tannenbaum's review⁹ of the available insurance statistics suggests that persons of average weight or less are not as likely to develop cancer as are those who are overweight. Obesity and the consumption of more food than the body needs for its current activity appear to be contraindicated.

Other nutritional factors undoubtedly have some effect on the formation of tumors. In the present state of our knowledge, however, caloric intake appears to be the best defined nutritional factor in the formation of tumors. Probably avoidance of overweight, besides being of value prophylactically in diabetes, heart disease and arthritis, may aid in the prevention of many types of cancer occurring in man or, at least, delay the onset. The study of the relationship of nutrition to the origin and growth of tumors appears to be a fruitful and possibly practical field of investigation.

DECELERATION IN MEDICAL EDUCATION

Elsewhere in this issue is a directive of the Selective Service System pertaining to deceleration of medical education. Part 2 of this directive, providing that medical students shall not be required to pursue an accelerated course of study, may require some interpretation for the medical schools and the local boards.

A nonrecurring special study period of about three or four months' duration, in addition to a normal vacation period of three months, will not constitute a departure from the provisions of the directive, provided the medical school assumes responsibility for the work of the students. The school must be able to certify to the Selective Service System that the students engaged in this special study are registered in the medical school and are advancing toward the professional objective of an understanding of medicine. The

1. Tannenbaum, Albert: The Initiation and Growth of Tumors; Introduction I. Effects of Underfeeding, *Am. J. Cancer* 38: 335 (March) 1940.

2. Tannenbaum, Albert: The Genesis and Growth of Tumors; II Effects of Caloric Restriction per Se, *Cancer Research* 2: 460 (July) 1942.

3. Visscher, M. B.; Ball, Zeldin B.; Barnes, R. H., and Svendsen, Ivar: The Influence of Caloric Restriction on the Incidence of Spontaneous Mammary Carcinoma in Mice, *Surgery* 11: 48 (Jan.) 1942.

4. Saxton, J. A. Jr.; Boon, M. C., and Furth, J.: Observations on the Inhibition of Development of Spontaneous Leukemia in Mice by Underfeeding, *Cancer Research* 4: 401 (July) 1944.

5. White, Florence R.; White, Julius; Mider, G. B.; Kelly, Margaret G., and Heston, W. F.: Effect of Caloric Restriction on Mammary-Tumor Formation in Strain C3H Mice and on the Response of Strain DBA to Painting with Methylecholanthrene, *J. Nat. Cancer Institute* 5: 43 (Aug.) 1944.

6. Rusch, H. P.; Kline, B. F., and Baumann, C. A.: The Influence of Caloric Restriction and of Dietary Fat on Tumor Formation with Ultraviolet Radiation, *Cancer Research* 5: 431 (July) 1945.

7. Tannenbaum, Albert: The Dependence of Tumor Formation on the Degree of Caloric Restriction, *Cancer Research* 5: 609 (Nov.) 1945; The Dependence of Tumor Formation on the Composition of the Caloric Restricted Diet as Well as on the Degree of Restriction, *ibid.*, p. 616.

8. Tannenbaum, Albert: The Dependence of the Genesis of Induced Skin Tumors on the Caloric Intake During Different Stages of Carcinogenesis, *Cancer Research* 4: 673 (Nov.) 1944.

9. Tannenbaum, Albert: Relationship of Body Weight to Cancer Incidence, *Arch. Path.* 30: 509 (Aug.) 1940.

work may or may not be done in residence and may include one or more of the following supervised assignments, which must be in the fields of clinical or basic medical sciences: reviews of medical literature, preparation of theses, laboratory or research work, elective medical courses, or informal clerkships in hospitals acceptable to the medical school. Students who have satisfactorily just completed an academic year in the medical school should first be promoted to the next medical class prior to this special study period. Such tuition charges as the school may wish to assess for the special study period can be determined by each school for itself.

The directive of the Selective Service System deserves and will receive the highest commendation by medical schools and medical educators, who will assume the responsibilities involved with seriousness and good faith. Since there is now practically no doubt that the medical A. S. T. P. will be discontinued by the end of the current academic year (along the same lines as the Navy V-12 program), this ruling means that medical schools can now (1) decelerate, if they so desire, with each academic session commencing in the autumn, (2) adjust their calendars to the new internship schedules of the "reconverted 9-9-9 program" (see *THE JOURNAL*, November 24, p. 878) pointing toward annual internship appointments in June and (3) free their clinical facilities for a period of three to six months next spring and summer to provide educational opportunities—perhaps externships—for returning medical officers desiring such training. Any medical school planning special courses for physician veterans should notify the Council on Medical Education and Hospitals at once, so that they can be included in a supplement to the "Postgraduate Continuation Courses for Veteran and Civilian Physicians" published in *THE JOURNAL* December 8. Reprints of these lists are widely distributed in response to a large demand.

Current Comment

BENJAMIN RUSH, M.D. (1745-1813)

The two hundredth anniversary of the birth of Benjamin Rush¹ occurs Dec. 24, 1945. He was a signer of the Declaration of Independence, a public spirited citizen and a distinguished physician. Benjamin Rush was appointed the first professor of chemistry (1768) at the first medical school (of the University of Pennsylvania) in the English Colonies on the American continent at the early age of 23. At the University of Pennsylvania he became associated on the faculty with John Morgan² (1735-1789), the first professor of medicine (1765) in the first medical school in our country, William Shippen Jr.² (1736-1808), Adam Kuhn, pro-

fessor of materia medica and botany, and Thomas Bond (1712-1784), founder with Benjamin Franklin and physician of the Pennsylvania Hospital (1751), professor of clinical medicine, the first professor with this title in America. Benjamin Rush, the "American Sydenham" (Lettsom) was, according to Welch, "the greatest historical figure in American medicine." He described the Philadelphia epidemic (1793) of yellow fever most accurately and noted that mosquitoes were particularly numerous in times of epidemics. He described dengue independently in 1780, although Bylon gave the original description in 1779. He advised the extraction of decayed teeth for the relief of dyspepsia, rheumatism of the hip joint and epilepsy. These interesting case reports were published in his "Medical Inquiries and Observations"³ under the title "An Account of the Cure of Several Diseases By the Extraction of Decayed Teeth." Benjamin Rush received his medical degree at Edinburgh. He was one of the founders of the Philadelphia College of Physicians in 1787. He founded the Philadelphia Dispensary for the poor in 1786. He advocated preventive medicine and introduced a code of medical ethics, antedating Thomas Percival of Manchester, England, considered the "father of a system of medical ethics."

NEW POWDER FOR FUNGOUS INFECTIONS

Fungous infections have been among the more stubborn medical problems in the Pacific war, accounting for as high as three fourths of all sickbay calls at some tropical bases. Some standard remedies useful at home were too irritating in the steaming tropical islands. A new remedy for the condition was tested by Commanders Henry C. Shaw, Marion B. Sulzberger and Abram Kanof, U.S.N.R. The active ingredients of the substance in powder form are undecylenic acid (2 per cent), a fatty acid found in sweat, and its zinc salt, zinc undecylenate (20 per cent), which are mixed with ordinary talc. The remedy can be used in the form of an ointment which contains 5 per cent undecylenic acid and 18 per cent zinc undecylenate in a carbowax base with water, propylene glycol and triethanolamine. The new drug was used on men at the Amphibious Training Base, Fort Pierce, living as they would during an assault, wearing combat clothing, working in the water and under the hot sun. More than 1,800 men employed the undecylenic preparation, more than 2,000 used other preparations, while more than 1,600 used none at all in order to compare results. Fungous infection of the feet developed in 28 per cent of trainees who did not use prevention. Regular dusting with the new powder cut infections to 4 per cent. Under the same conditions 15 per cent developed infection while using powder containing boric and salicylic acids. Groin infections were cut from 10.3 to 0.7 per cent by the powder.

3. Rush, Benjamin: *Medical Inquiries and Observations*, ed. 3, Philadelphia, Prichard and Hall, 1809 (*The Cure of Diseases by the Extraction of Teeth*), vol. 1, pp. 349-353. In October 1801 Rush attended Miss A. C., who suffered from rheumatism of the hip. In November he directed the decayed teeth to be extracted, and the rheumatism of the hip was cured! He emphasized the connection between the extraction of decayed teeth and the cure of general diseases. Extraction of the decayed tooth in the case of Mrs. J. R. cured her of her dyspepsia. He refers to prior work by Drs. Darwin, Petit and Siebold.

1. Rush was born Dec. 24, 1745, at Byberry, near Philadelphia, and died April 19, 1813.

2. John Morgan and William Shippen Jr. both studied medicine at Edinburgh under William Cullen.

MEDICINE AND THE WAR

SELECTIVE SERVICE

DEFERMENT AND DECELERATION IN MEDICAL EDUCATION

The following State Directive Advise No. 322 was issued December 3 from National Headquarters of the Selective Service System by Lewis B. Hershey.

1. Local Board Memorandum No. 115 provides for consideration for the deferment of registrants who are pursuing a full time course of study in a recognized school of medicine, dentistry, veterinary medicine or osteopathy until their graduation if they have completed a satisfactory preprofessional course prior to their entrance, provided that a student of veterinary medicine should not be considered for occupational deferment

if he commenced his course in veterinary medicine on or after March 15, 1945.

2. Students who are entitled to consideration for deferment under such provisions shall not be required to pursue an accelerated course of study in a recognized school of medicine, dentistry, veterinary medicine or osteopathy, provided that the course of study includes at least nine months of study and not more than three months of vacation in each calendar year.

3. Local boards will consider such students for deferment during the usual three month vacation period if it is certified by a responsible official of the school that the students are, in fact, bona fide students and are satisfactorily pursuing a full time course of study.

ARMY

ARMY TO RELEASE TWENTY-THREE HOSPITALS

Major Gen. Norman T. Kirk, Surgeon General of the Army, recently announced that the Army will release twenty-three hospitals out of its wartime peak of sixty-five by Jan. 1, 1946. These hospitals will be offered to the Veterans Administration or to the former owners of these hospitals. Additional hospitals will be released after the first of the year.

The peak load of hospitals in the United States, reached at the end of June 1945, was 318,000 and has been dropping slowly ever since, despite the influx of men from overseas theaters. The Medical Department estimated that by Jan. 1, 1946 this total will have declined to about 220,000 patients and that by June 1947 there will be only 70,000 men remaining in army hospitals.

The hospitals to be released and the schedule are as follows:

Ashburn General Hospital, McKinney, Texas, December 12; Barnes General Hospital, Vancouver, Wash., December 5; Battey General Hospital, Rome, Ga., December 15; Baxter General Hospital, Spokane, Wash., November 10; Darnall General Hospital, Danville, Ky., December 15; DeWitt General Hospital, Auburn, Calif., December 31; Finney General Hospital, Thomasville, Ga., December 15; Camp Forrest Hospital Center (POW), Camp Forrest, Tenn., December 15; Foster General Hospital, Jackson, Miss., December 15; Glennan General Hospital, Okmulgee, Okla., November 21; Hammond General Hospital, Modesto, Calif., December 21; Harmon General Hospital, Longview, Texas, December 5; Hoff General Hospital, Santa Barbara, Calif., November 10; La Garde General Hospital, New Orleans, November 28; McCaw General Hospital, Walla Walla, Wash., November 25; Camp Pickett General Hospital, Camp Pickett, Va., December 1; Stark General Hospital, Charleston, S. C., October 15; Thayer General Hospital, Nashville, Tenn., December 31; Torney General Hospital, Palm Springs, Calif., November 20; Winter General Hospital, Topeka, Kan., December 1; Camp Butner Convalescent Hospital, Camp Butner, North Carolina, December 15; Camp Pickett Convalescent Hospital, Camp Pickett, Va., October 27; Wakeman Convalescent Hospital, Camp Atterbury, Ind., December 15.

DEDICATE BRONZE PLAQUE OF DR. WALTER HUGHSON

A bronze plaque in memory of the late Dr. Walter Hughson was recently dedicated and established at Deshon General Hospital, Butler, Pa. Dr. Hughson, who for ten years had served as director of the Otological Research Laboratories at Abington Memorial Hospital, Abington, Pa., and associate professor of otology in the Medical School and Graduate School of Medicine at the University of Pennsylvania, died in September 1944. As early as 1942 Dr. Hughson had formulated his concept of rehabilitation of war casualties and had done a great deal of work in the fitting of hearing aids on an objective basis.

The plaque occupies a place of honor in the Aural Rehabilitation Clinic at Deshon General Hospital and was presented to the hospital through the courtesy of the American Rolling Mill Company of Butler, Pa., and of the Nail City Bronze Company, Wheeling, W. Va.

ARMY EXCEEDS QUOTA ON RELEASE OF DOCTORS

The War Department recently announced that the Army's quota of 13,000 doctors to be released to civilian life by December 31 has been exceeded six weeks in advance of the deadline. The total number of doctors who have been separated from the service since VE day reached 13,320 for the week ended November 16. For the same week the total for nurses who have been released came to 20,222 and the dentists' total was 2,460. From a peak strength of over 45,000, all but 11,000 will be out of the service by June 1, 1946, it was stated.

NEW CHIEF NURSE AT GARDINER GENERAL HOSPITAL

Major Floramund F. Difford, A. N. C., was recently named chief nurse at Gardiner General Hospital, Chicago, to succeed Major Nellie M. Denison, who is retiring after twenty-seven years' service with the Army Nurse Corps. A member of the Army Nurse Corps since 1936, Major Difford was serving in the Philippines at the time of the Japanese invasion. After the fall of Manila she and a number of patients and doctors were smuggled out to Australia, where she stayed until November 1944. Since that time she has been stationed in the United States.

COLONEL ESMOND R. LONG LENT TO VETERANS ADMINISTRATION

Col. Esmond R. Long, chief consultant on tuberculosis for the Surgeon General of the Army, was recently lent to the Veterans Administration on request of Major Gen. Paul R. Hawley, acting surgeon general, to assist in establishing a superior standard of care for tuberculous veterans. Colonel Long, who was commissioned in 1942, recently returned from Germany, where he was attached to the public health branch of the Office of Military Government.

REGULAR MEDICAL OFFICERS TAKE REFRESHER COURSES

The Office of the Surgeon General recently announced the Army's new plan to give professional training to regular medical officers who have been on administrative assignments. One hundred doctors already have been ordered to training. Twenty-one of the group are specializing in internal medicine, 33 in general surgery. The others are studying radiology, ear, nose and throat, anesthesiology, neuropsychiatry, urology, pathology, orthopedics, public health and obstetrics and gynecology.

ARMY AWARDS AND COMMENDATIONS

Major Charles Leasum

The Bronze Star was recently awarded to Major Charles Leasum, formerly of Sturgeon Bay, Wis.. The citation accompanying the award called attention to the fact that Major Leasum, "while a prisoner of war in Japanese Prison Camp No. 1, Cabanatuan, Philippine Islands, from October 1944 to January 1945, performed outstanding services as chief of dysentery area and ward surgeon in a general hospital. With improvised, makeshift equipment and depleted medical supplies, he labored against great odds and on a starvation diet. Faced with the problems of malnutrition, deleterious housing and sanitary conditions and the constant danger of food contamination by insects and vermin, he succeeded in controlling epidemics which threatened the entire camp. Major Leasum's devotion to duty, his unflinching courage and initiative, were important factors in maintaining the will to survive among his fellow prisoners of war." Dr. Leasum graduated from Jefferson Medical College of Philadelphia in 1918 and entered the service Dec. 27, 1940.

Major William F. Gassaway

Major William F. Gassaway, formerly of Ellicott City, Md., was recently awarded the Bronze Star for meritorious service from Dec. 25, 1944 to March 19, 1945 near Wingen, Philippsbourg, Behren, Styring, Wendel and Forbach, France. Said the citation, "Under your tireless leadership both the regimental and battalion aid stations functioned in a superior manner throughout this entire period of action against the enemy. In addition, your efforts to prevent and cure trench foot kept the loss of personnel from the cause at a minimum. Your unflinching supervision and your ability in commanding the medical detachment under your control to fulfil the most difficult assignments were an invaluable contribution to the success of the 274th Infantry Regiment." Dr. Gassaway graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1940 and entered the service Aug. 1, 1941.

Major Gerald J. Friedman

Major Gerald J. Friedman, formerly of New York, was recently commended by Lieut. Col. Edward G. Billings, medical consultant in the Office of the Surgeon, Headquarters, South Pacific Base Command, APO 502. The commendation read, in part, "It is indeed a pleasure to commend you for the superior way in which you assisted this office between Feb. 7 and March 1, 1945 in the compilation of data relevant to the incidence, forms and epidemiology of diphtheria infections in this command. You applied your talents diligently and showed great aptitude for sensing the clinical importance of the information at hand. This work which you have done will aid very materially this headquarters in making known its experiences with this infection." Dr. Friedman graduated from the New York University College of Medicine, New York, in 1937 and entered the service June 9, 1941.

Captain James William Urie

The Bronze Star was recently awarded to Capt. James William Urie, formerly of Elmhurst, Del., for heroic achievement on Mount Mapatad, Luzon. According to the citation, Captain Urie received word that five seriously wounded men on the line needed medical attention at once. He moved out immediately with a party of five, over terrain so severe that they were unable to reach the men the same evening. Dr. Urie graduated from Hahnemann Medical College and Hospital of Philadelphia in 1929 and entered the service June 19, 1942.

Lieutenant Colonel Robert O. Y. Warren

A special commendation was recently awarded to Lieut. Col. Robert O. Y. Warren, formerly of Wilmington, Del. According to the citation, "When an evacuation hospital area was flooded by an overflowing river the night of Nov. 2, 1944, Lieutenant Colonel Warren, chief of the medical service of the unit, assumed charge of all medical wards and directed the evacuation of all patients without loss or serious disability to the patients. He then efficiently supervised the continuation of

treatments and medication in effect before the flood. His exemplary leadership, skill and loyalty to duty manifest the fine tradition of the U. S. Army Medical Corps." Dr. Warren graduated from Johns Hopkins University School of Medicine, Baltimore, in 1929 and entered the service July 12, 1942.

Lieutenant Colonel Thomas H. Tomlinson Jr.

The Legion of Merit was recently awarded to Lieut. Col. Thomas H. Tomlinson Jr., formerly of Thomasville, N. C., who, according to the citation, "developed and closely supervised the theater hospitalization program and participated to a great extent in the development of all other theater medical plans. Through his untiring efforts and organizational ability he has successfully coordinated the medical activities in this theater for a period of over thirty-three months." Dr. Tomlinson graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1932 and was commissioned in the United States Public Health Service in 1934.

Major Robert C. Haubrich

Major Robert C. Haubrich, formerly of Pataskala, Ohio, was recently awarded the Bronze Star for his services at Okinawa. A flight surgeon with the 7th Air Force, he accompanied combat airmen on sorties against the Japanese and studied their reactions and equipment in combat in order to provide for more efficient training and equipment. Dr. Haubrich graduated from Ohio State University College of Medicine, Columbus, in 1937 and entered the service May 18, 1942.

Captain Oscar A. Axelson

Capt. Oscar A. Axelson, formerly of Youngstown, Ohio, was recently awarded the Bronze Star for meritorious service in support of combat operations in France, Belgium and Germany as divisional surgeon with the headquarters company of the Third Armored Division. Dr. Axelson graduated from the University of Michigan Medical School, Ann Arbor, in 1930 and entered the service July 30, 1942.

Captain James R. Karns

Capt. James R. Karns, formerly of Baltimore, was recently awarded the Bronze Star for meritorious achievement in South Pacific military operations. Dr. Karns graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons in 1940 and entered the service April 20, 1942.

Captain Frank S. Skura

Capt. Frank S. Skura, formerly of Wilmington, Del., was recently awarded the Bronze Star for his work in the period from Sept. 8, 1944 to Feb. 8, 1945 in France, Germany and Luxembourg. Dr. Skura graduated from Georgetown University School of Medicine, Washington, D. C., in 1935 and entered the service June 20, 1942.

Captain James I. Rhiehl

The Silver Star was recently awarded to Capt. James I. Rhiehl, formerly of Columbus, Ohio, for rescue work under fire at Manila on Feb. 3, 1945. Dr. Rhiehl graduated from the Ohio State University College of Medicine, Columbus, in 1940 and entered the service Aug. 28, 1942.

Major John G. Anderson

Major John G. Anderson, formerly of Lynchburg, Ohio, was recently awarded the Bronze Star for "meritorious achievement in connection with military operations against the enemy" on Mindanao Island, the Philippines. Dr. Anderson graduated from the University of Cincinnati College of Medicine in 1930 and entered the service Aug. 1, 1942.

Captain Stephen E. Muller

The Bronze Star was recently awarded to Capt. Stephen E. Muller, formerly of Baltimore, "for meritorious achievement in South Pacific military operations." Dr. Muller graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1937 and entered the service April 20, 1942.

NAVY

UNITED STATES MEDICAL FACULTY
COMMENDED BY NAVY

A certificate of commendation was recently presented to Dean Francis S. Smyth and the faculty of the University of California Medical School, Berkeley, by the Bureau of Medicine and Surgery of the United States Navy for cooperation in the training of physicians for the naval service. The certificate was accompanied by a letter from Vice Admiral Ross T. McIntire, Surgeon General of the Navy, in which he congratulated the members of the faculty for their contribution to the war effort, and to medical education, stated that he realized the extreme difficulties and obstacles that had to be overcome in accelerating instruction and changing methods in teaching with a faculty depleted by demands of the services and saying "I feel that medical schools have given a most distinguished service which has had considerable effect on the war effort."

Also in connection with the Navy's training program, Rear Admiral C. H. Wright, commandant of the 12th Naval District, sent a letter in which he expressed sincerest appreciation on behalf of the Navy for the contribution of Dean Smyth in screening the Navy V-12 premedical candidates during the past two years. As a result the Navy was provided with the highest caliber of trainees, Admiral Wright stated.

NAVY AWARDS AND COMMENDATIONS

Captain Gordon B. Tayloe

The Legion of Merit was recently awarded to Capt. Gordon B. Tayloe, formerly of Aulander, N. C., "for exceptionally meritorious conduct in the performance of outstanding services to the government of the United States as senior medical officer of the United States Naval Group in China from Sept. 29, 1943 to June 5, 1945. Faced with the gigantic task of establishing medical facilities throughout China for the care of American naval personnel and their Chinese allies," the citation continued, "Captain Tayloe moved steadily forward in this cooperative enterprise and, despite difficult problems of supply, transportation and limited personnel, succeeded in setting up medical units in some of the most hazardous and inaccessible parts of China, including many places behind the Japanese lines. By his personal devotion and competent professional supervision, he led his organization in the creation of a remarkable record of health for Americans in some of the most disease-ridden areas of the world and brought the aid of modern medicine to thousands of Chinese guerillas who had never known it before, thereby effecting and maintaining high standards of Sino-American relations, which resulted in benefits to every American in his theater and will be of lasting value to his country. His superb leadership, resolute courage and unwavering devotion to duty reflect the highest credit on Captain Tayloe and the United States Naval Service." Dr. Tayloe graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1927 and entered the service Jan. 28, 1944.

Commander Paul Titus

Comdr. Paul Titus, Pittsburgh, was recently commended by the Secretary of the Navy, James Forrestal, "for outstanding service while on duty in the Personnel Section of the Bureau of Medicine and Surgery. Skilled and untiring in carrying out an assignment demanding the highest qualities of discrimination and thoroughness, Commander Titus rendered distinctive service in establishing a professional standard for intern and residency training in naval hospitals, contributing materially to the care of naval personnel. Prior to appointment and active duty assignment in the Medical Corps of the United States Naval Reserve, Commander Titus was unstinting in his cooperative efforts toward the establishment of professional classification of reserve medical officers and the procurement of important data, obtained at considerable personal expense and inconvenience. His valuable contribution toward the war effort in this specialized field reflects the highest credit on

Commander Titus, his profession and the United States Naval Service." Dr. Titus graduated from Yale University School of Medicine, New Haven, Conn., in 1911 and entered the service July 22, 1944.

Lieutenant Ferdinand Victor Berley

The Bronze Star was recently awarded to Lieut. Ferdinand Victor Berley, formerly of Chicago, "for heroic service while attached to the staff of the Medical Dispensary at Cavite Navy Yard in the Philippines, during and subsequent to the bombing attack by enemy Japanese forces on Dec. 10, 1941. Undaunted by the continuous bursting of enemy bombs," according to the citation, "which rained death and destruction and rendered the Navy Yard a blazing inferno, Lieutenant (then Lieutenant junior grade) Berley administered first aid with prompt and unfailing efficiency despite the danger and confusion. Working rapidly and with resourceful initiative he assisted other medical officers present in caring for more than 100 wounded and injured before arrangements were made to transfer casualties by boat and by truck to the Canacao Hospital, where he continued his valiant efforts during the subsequent evacuation of all patients to the Sternberg General Hospital in Manila. Concerned only for the safety of our sick and wounded, Lieutenant Berley rendered gallant service until ultimately taken prisoner by the Japanese. His steadfast courage, resolute fortitude and self-sacrificing devotion to duty in the face of extreme peril reflect the highest credit on Lieutenant Berley and on the United States Naval Reserve." Dr. Berley graduated from Northwestern University Medical School, Chicago, in 1939 and entered the service Aug. 23, 1939.

Lieutenant Commander Ward W. Briggs

For meritorious service aboard a hospital ship from September 1943 to January 1945 Lieut. Comdr. Ward W. Briggs, formerly of Wilmington, Del., was recently awarded a special commendation at the U. S. Naval Hospital, Corona, Calif. The commendation stated that his outstanding skill was responsible for alleviating suffering and minimizing the loss of life during his tour of duty aboard the hospital ship. Dr. Briggs graduated from Johns Hopkins University School of Medicine, Baltimore, in 1936 and entered the service in April 1941.

MISCELLANEOUS

HOSPITALS NEEDING INTERNS
AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

INDIANA

Caylor-Nickel Clinic, Bluffton. Capacity, 51; admissions, 1,942. Dr. Harold D. Caylor, Director (residents—mixed service, April 1).

MARYLAND

South Baltimore General Hospital, Baltimore. Capacity, 170; admissions, 5,951. William A. Dawson, Director (intern, April 1).

MASSACHUSETTS

Belmont Hospital, Worcester. Capacity, 250; admissions, 1,061. Dr. Huston K. Spangler, Superintendent (resident—communicable diseases; resident—tuberculosis, April 1).
Memorial Hospital, Worcester. Capacity, 215; admissions, 7,713. Dr. Winthrop B. Osgood, Medical Superintendent (3 interns).

NORTH CAROLINA

Charlotte Memorial Hospital, Charlotte. Capacity, 528; admissions, 7,733. Mr. Carl I. Flath, Administrator (residents—physician and interns—medicine, radiology, pathology).

OHIO

Fairview Park Hospital, Cleveland. Capacity, 201; admissions, 6,170. Mr. Philip Vollmer Jr., Superintendent (intern).
Lima Memorial Hospital, Lima. Capacity, 182; admissions, 5,303. Mr. Leslie Forksrud, Superintendent (interns).

PENNSYLVANIA

St. Joseph's Hospital, Lancaster. Capacity, 260; admissions, 5,128. Sister Mary Turibia, Administrator (interns, residents—mixed service).

VIRGINIA

Norfolk General Hospital, Norfolk. Capacity, 393; admissions, 9,871. Mr. R. J. Stull, Superintendent (interns).

PHYSICIANS SEPARATED FROM SERVICE

Illinois—Continued

Pierce, Mila I., Capt., 1835 S. Spaulding Ave., Chicago.
Rhea, Keith, Major, 620 W. Adams St., Clinton.
Ricketts, Frederick J., Major, Sadorus.
Roberson, William V., Capt., N. 9th St., Wood River.
Seid, Ben, 1st Lt., 5640 Winthrop Ave., Chicago.
Sexton, George A., Major, 415 N. State St., Monticello.
Sheagren, John W., Lt. Col., 303 Empire Bldg., Rockford.
Smith, William B., Major, Grand Ridge.
Stevens, Theodore R., Capt., 2711 Morse Ave., Chicago.
Stokes, Robert F., Capt., 1600 S. 60th St., Cicero.
Tesar, Frank J., Capt., 4021 N. 21st Pl., Chicago.
Tucker, Francis C., Major, 1418 E. 54th Pl., Chicago.
Turner, Samuel J., Capt., 4923 N. Ridgeway, Chicago.
Van Dorf, Nathaniel, Capt., 1238 S. Harding Ave., Chicago.
Wallheiser, La Verne M., Capt., 7135 E. End Ave., Chicago.
Weintraub, Jerome B., Capt., 681 S. State St., Lincoln.
Zivin, Simon, Capt., 2138 Evergreen Ave., Chicago.

Indiana

Adler, Raymond N., Capt., 907 Delaware St., Evansville.
Arlook, Theodore D., Capt., 409 Baldwin St., Elkhart.
Austin, Eugene W., Major, 1433 N. Pennsylvania, Indianapolis.
Brown, Frederic W., Major, 719 Union, Apt. N-2, Fort Wayne.
Clark, Fred O., Capt., Box 187, Syracuse.
Cohen, Benjamin B., Major, 4117 Parrish Ave., East Chicago.
Combs, Herman T., Major, R. R. 1, Box 341, Evansville.
Comer, Kenneth E., Capt., Mooresville.
Cotter, Edward R., Capt., 4220 Homerlee, East Chicago.
Davidson, Morris, Major, 1129 Lafayette St., Elkhart.
Davis, Sam J., Major, 431 E. National Ave., Brazil.
Dyer, George W., Capt., 2710 Wilson Dr., Terre Haute.
Freeman, Joseph W., Capt., Syracuse.
Ganz, Max, 1st Lt., 1309 W. 5th St., Marion.
Gitlin, William A., Capt., 528 W. Market St., Bluffton.
Good, Richard P., Major, 417 Conradt St., Kokomo.
Gosman, James H., Capt., 317 N. Clay, Jasper.
McCool, Joe H., Capt., 1435 Emmett St., Evansville.
Mueller, Paul F., Lt. Col., 547 Ridge Ave., Lawrenceburg.
Nigh, Rufus M., Capt., Fairland.
Pearson, William E., Capt., 290 N. Wabash St., Wabash.
Perry, Frederick G., Capt., 700 S. Michigan St., Plymouth.
Sala, Joseph J., Capt., 537 Taft Pl., Gary.
Scherschel, John P., Capt., 1226 N. Illinois, Apt. 10, Indianapolis.
Shaffer, Kenneth L., Capt., 103 N. 6th, Vincennes.
Voges, Edward C., Major, 1402 Wabash Ave., Terre Haute.
Wischeart, Robert H., Major, 224 Barrone St., Lebanon.
Wood, Opal L., Capt., 113 N. Walnut St., Brazil.

Iowa

Blackstone, Martin A., Capt., 3321 Floyd Ave., Sioux City.
Caulfield, John D., Major, 3 W. Main St., New Hampton.
Chandler, Weldon P., Capt., Danburg.
Conzett, Donald C., Lt. Col., 2020 S. Grandview Ave., Dubuque.
Greek, Louis M., 1st Lt., 1169 7th St., Dos Moines.
Klockslem, Harold L., Capt., Rippey.
Loeck, John F., Capt., Aurora.
Penn, Eugene C., Capt., 225 5th St., West Des Moines.
Snyder, Dean C., Capt., 825 7th St., DeWitt.

Kansas

Basham, Charles E., Major, Basham Hosp., Eureka.
Clark, Orville R., Major, 221 Woodlawn Ave., Topeka.
Maxson, Theodore R., Capt., 723 E. Jackson St., Iola.
Patterson, Harold L., Capt., 502 S. Douglas, Lyons.
Pettersen, Cecil E., Major, State Sanatorium, Norton.
Robinson, Leo D., Capt., 107 N. 1st St., Iola.
Speirs, Richard E., Major, 206 Walnut, Dodge City.

Kentucky

Bale, Shelby G., 1st Lt., Elizabethtown.
Bush, Joe M., Major, 425 N. Maysville St., Mount Sterling.
Corum, Ward L., Capt., 1481 S. 18th St., Louisville.
Doak, Alfred D., Lt. Col., 708 Magnolia Ave., Shelbyville.
Klein, Max D., Major, 918 Magnolia St., Skelbyville.
McAtee, John D., Major, 108 Beechwood Rd., Covington.
Stone, Thomas B., Capt., Hickman.
Veirs, Everett R., Major, Second Nat'l Bank, Ashland.
Vesper, Albert J. Jr., Major, 715 Monroe Ave., Newport.

Louisiana

Bertinot, Gerald J., Capt., Sunset.
Cash, Ralph L., Capt., Charity Hosp., New Orleans.
Charbonnet, L. S. Jr., Major, 2809 Audubon St., New Orleans.
Condie, Dominic S., Capt., 502 Alexander St., Monroe.

Louisiana—Continued

Easterly, Clay E., Capt., % Jake Agosta, Plaquemine.
Filizola, Attilio V., Capt., 12028 Mehle Ave., Arabia.
Gajan, Isidore W. Jr., Capt., 120 Lee St., New Iberia.
Kramer, Elmer E. W., Major, 2030 Penniston St., New Orleans.
Talbot, Ralph J., 1st Lt., 616 N. 2d St., Monroe.
Ware, Francis L., Capt., 3503 Gen. Pershing St., New Orleans.

Maine

Courville, Albert L., Capt., 34 Franklin St., Rumford.
Dixon, Walter G., Capt., 16 Deering St., Norway.
Greco, Edward A., Lt. Col., 12 Pine St., Portland.
Jones, Richard P., Capt., 5 Franklin St., Belfast.
Lowry, Oram R. Jr., Major, 27 Oak St., Rockland.
McCrum, Philip H., Major, 15 Fairlawn Ave., South Portland.
Marston, Paul C., Major, 16 Federal Rd., Kezar Falls.
Page, Rosario A., Capt., 13 Coolidge Ave., Caribou.
Reed, James W., Major, Farmington.

Maryland

Bright, Albert S., Capt., 8359 Colesville Pike, Silverspring.
Corley, Karl C., Major, 105 Grafton St., Chevy Chase.
Franz, Bruce J., Capt., 2104 Rogers Ave., Baltimore.
Murray, James S. Jr., Capt., 4411 Greenway, Baltimore.
Racusin, Nathan, Capt., 206 S. Gilmor St., Baltimore.
Scott, Earl S., Capt., 3239 Powhatan Ave., Baltimore.
Yeager, G. H., Col., 1109 Harriton Rd., Poplar Hill, Baltimore.

Massachusetts

Allanson, James C., Major, 165 Cypress St., Brookline.
Bullock, Donald S., Capt., 15 Main St., Falmouth.
Castleton, Herbert E., Capt., 149 S. Union St., Rockland.
Cinella, John T., Capt., 97 Main St., Lee.
Cole, Lionel M., Capt., 74 North St., Pittsfield.
Comeau, William J. Jr., Major, 19 Lowell Ave., Haverhill.
Cosgriff, Stuart W., Capt., 53 Bartlett Ave., Pittsfield.
Cote, Gerard, Capt., 80 Linden St., Salem.
Coughlin, Edward J. Jr., Major, Ide Rd., Williamstown.
Dahill, William J., Capt., Old Sudbury Rd., Wayland.
Day, Harry L., Capt., City Hosp., Worcester.
DeMarco, Joseph Jr., Major, 156 Shrewsbury St., Worcester.
Drooker, Joshua C., Major, 15 Stratton, Dorchester.
Dunphy, John E., Lt. Col., 2 Netherlands Rd., Brookline.
Ellis, Laurence B., Lt. Col., 24 Francis Ave., Cambridge.
Ellis, Sydney, Major, 217 Princeton St. E., Boston.
Ernst, Robert G., Major, 30 Ford St., Springfield.
Faber, Max, Major, 1 County Rd., Chelsea.
Flynn, Herbert L., Lt. Col., State St., Belchertown.
Franklin, Stanley H., Capt., 1726 Commonwealth Ave., Boston.
Galm, Irvin G., Major, Boston City Hosp., Boston.
Galbo, Samuel J., Capt., 19 Mechanic St., Shelburne Falls.
Howard, James H., Capt., 560 Tyler St., Pittsfield.
Jolliffe, Leslie S., 1st Lt., 10 Meadow St., Suquamun.
Lyman, James R., Capt., 24 Forest St., Wellesley Hills.
Lynch, Joseph P., Capt., 256 Walnut St., Brookline.
Mandrachia, Alfonso C., Capt., 9 Wolcott St., Everett.
Mulhern, John F., Capt., 29 Spring St., Taunton.
Sherwin, Herbert, Major, 1445 Cambridge St., Cambridge.
Showstack, Irving, Capt., 9 Richardson Ave., Wakefield.
Swank, R. L., Major, 489 Commonwealth Ave., Newton Center.
Tadeo, Arthur E., Capt., 44 Walnut, Natick.
Tilden, Benjamin R., Capt., Main St., Marion.

Michigan

Alfenito, Felix S., Capt., 328 Union S., Grand Rapids.
Bailey, Carl C., Capt., 12824 Broad St., Detroit.
Baluss, John W. Jr., Capt., Lane Hall, Ann Arbor.
Beitman, Max R., Capt., 17368 Indiana, Detroit.
Brace, Fred C., Major, 2311 Marywood Blvd., Grand Rapids.
Bruno, Nicholas J., Capt., Stambaugh.
Burnstine, Perry P., Capt., 8451 La Salle Blvd., Detroit.
Cooper, Donald R., Capt., 2329 Glenwood Dr., Kalamazoo.
Dawson, Walter D., Capt., 1124 Bates St. S.E., Grand Rapids.
DeBoer, Guy W., Capt., 11 Maryland N.E., Grand Rapids.
Diamond, Bernard L., Major, University Hosp., Ann Arbor.
Domeier, Luverne H., Capt., Wayne Univ. Med. Sch., Detroit.
Ferrand, Louis G., Capt., 236 E. Maple St., Rockford.
Gordon, Devitt L., Lt. Col., 2121 Harrison St., Muskegon.
Greenberg, Morris Z., Capt., 3259 Sturtevant, Detroit.
Hamilton, Earl E., Capt., 156 E. Front St., Traverse City.
Hanna, Roger J., Lt. Col., 1301 W. Washington Ave., Jackson.
Heneveld, Edward H., Capt., 15324 E. Jefferson Ave., Detroit.
High, Howard C. Jr., Capt., 1420 Washington Hts., Ann Arbor.
Iler, Harris D., Major, 625 Jackson St., Clinton.
Juliar, Benjamin, Major, 17305 Muirland Ave., Detroit.

PHYSICIANS SEPARATED FROM SERVICE

J. A. M. A.
Dec. 22, 1945

Michigan—Continued

Kinzel, Robert J. W., Capt., 103 S. Chicago St., Litchfield.
Lansky, Mandell, Capt., 1247 Clairmont Ave., Detroit.
McDonnell, Walter, Capt., Pinconning.
Maison, George L., Major, Detroit.
Mintz, Morris J., Capt., 108 E. Fairplains, Greenville.
Procailo, Alexander B., Capt., 5820 Trenton St., Detroit.
Rice, Clair M., Capt., 1350 E. Jefferson Ave., Detroit.
Riggs, Harry L., Capt., 6733 Stanford Ave., Detroit.
Slaght, Earl M., 1st Lt., Elsie.
Stamell, Meyer, Capt., 3256 Calvert, Detroit.
Symons, Hyman, Major, 3160 2d Blvd., Detroit.
Terris, Charles Z., Capt., 900 Lincoln Rd., Grosse Pointe.
Thomas, Joseph W., Capt., 3818 Industrial Ave., Flint.
Thomson, Daniel C., Capt., University Hosp., Ann Arbor.
Toney, William E., Capt., 410 N. 8th St., St. Joseph.
Valk, William L., 1st Lt., 14 Geddes Heights, Ann Arbor.
Van Gorder, George F., Capt., Davison.
Van't Hof, Albert, Major, 547 Livingston N.E., Grand Rapids.
Van Wagnen, Frederick I., Capt., 123 Wall St., Jackson.
Vergosen, Harry E., Major, 9765 N. Martindale Ave., Detroit.
Vida, Alexander, Capt., 137 N. Harrington Ave., Detroit.
Vollmar, George K., Major, 870 Seward, Detroit.
Watson, Douglas J., Capt., 14500 Piedmont Rd., Detroit.
Weiss, Casimir P., Capt., 11814 Wilshire, Detroit.
Wells, Kenneth N., Capt., Spring Lake.

Minnesota

Bailey, Robert B., Capt., Fairmont.
Caspers, Carl G., Major, 4506 Lyndale Ave. S., Minneapolis.
Clark, Henry B. Jr., Major, 594 Montrose Lane, St. Paul.
Cummings, Damon W., Capt., Rushford.
Freeman, William N., Capt., Perham.
Gillespie, Delmar R., Major, 1143 1st St. N.W., Rochester.
Gilman, Lloyd C., Major, Box 58, Atwater.
Goss, Henry C., Major, 1421 Ives Ave., North Glencoe.
Grau, Robert K., Capt., 1375 W. California St., St. Paul.
Heck, William W., Major, 1212 Hawthorne Ave., St. Paul.
Henslin, Merrill E., Capt., LeRoy.
Hollinshead, William H., Major, 911 Goodrich Ave., St. Paul.
Kiesler, Frank G. Jr., Capt., U. of Minn. Hosps., Minneapolis.
Lipschultz, Oscar, Lt. Col., 2790 Xerxes Ave. S., Minneapolis.
Mayo, Charles W., Col., Mayo Clinic, Rochester.
Schmidt, Walter R., Major, Worthington.
Sturley, Rodney F., 1st Lt., General Hosp., Minneapolis.
Troost, Henry B., Capt., 711 Lincoln Ave., St. Paul.
Vanderhoff, Edward S., Major, Excelsior.

Mississippi

Weatherford, W. J., Capt., 729 Washington Ave., Pascagoula.

Missouri

Baers, Harry A., Major, 3945 W. Florissant Ave., St. Louis.
Devereaux, James A., Major, 508 N. Grand Blvd., St. Louis.
Jensen, Joshua E., Capt., 3720 Washington St., St. Louis.
Kelling, Douglas G., Major, Waverly.
Rost, William B., Major, 2422 Duncan St., St. Joseph.
Thotwmorton, Howard B., Capt., Park Ave. Apts., Sikeston.
Vogaw, Robert E., Major, 10 Warren Terrace, Clayton.
Wade, Frederick E., Capt., 2815 Olive St., Kansas City.
Warson, Samuel R., Capt., 4515A Laclede Ave., St. Louis.
Windmiller, Myrl E., Capt., 2540 Charlotte, Kansas City.

Montana

Bussabarger, Robert A., apt., 219 South Ave. W., Missoula.
Eneboe, Paul L., Capt., 213 S. Willson, Bozeman.
Hammerel, John J., Capt., 233 Avenue C, Billings.

Nebraska

Anderson, Ronald C., Lt. Col., Columbus.
Fellman, Abe C., Capt., 5035 Emmet St., Omaha.
Ohme, Kenneth A., Capt., Mitchell.
Patton, John E., 1st Lt., 4628 Capitol Ave., Omaha.
Rodkinson, Bernard L., Capt., Crawford.
Staley, Sanford O., Capt., 702 S. 36th St., Omaha.

New Hampshire

Brody, Nathan, Capt., 1381 N. Main St., Laconia.
Roe, Addison, Capt., 35 Prospect St., Newport.
Wroblewski, Walter G., Capt., 7 Hall Ave., Nashua.

New Jersey

Bertha, Nicholas A., Capt., 293 S. Main St., Wharton.
Clunan, Ambrose P., Major, 9th St., Prospect Heights, Trenton.
Corson, Kenneth E., Major, Vineland.

New Jersey—Continued

Drake, Willard M. Jr., Capt., R.F.D. 4, Vineland.
Ehrlich, Maxwell, Capt., 721 N. Broad St., Elizabeth.
Etheridge, Charles H., Lt. Col., 433 Prospect St., East Orange.
Gribbin, James A., Capt., 836 W. State St., Trenton.
Hamley, John J., Major, 153 2d St., Elizabeth.
Hawkes, Stuart Z., Lt. Col., 84 Washington St., Newark.
Irwin, Francis T., Capt., 253 Bloomfield Ave., Caldwell.
Karshmer, Ernest E., Capt., 927 S. Wood Ave., Linden.
Kohut, George J., Capt., 383 Lawrie St., Perth Amboy.
Krafchik, Louis L., Capt., 100 Bayard St., New Brunswick.
Miller, Reginald C., Major, 1420 Greenwood Ave., Trenton.
Newmayer, Joseph, Capt., 217 Union Ave., Delanco.
Novello, Joseph A., Major, 641 2d Ave., Elizabeth.
Quad, Clifford W., Major, 52 Northfield Ave., West Orange.
Ritota, Michael C., Capt., 301 Henry St., Orange.
Shapiro, Irving, Capt., 108 Schofield St., Newark.
Tansey, William A., Capt., 169 Hobart Ave., Short Hills.
Teschner, Bernard M., Capt., 9209 Hudson Blvd., North Bergen.
Timberlake, Baxter H., Major, 5414 Ventor Ave., Atlantic City.
Ward, Chauncey P., 1st Lt., 112 Chancellor Ave., Newark.
Watov, Samuel E., Capt., 615 Beatty St., Trenton.

New York

Adalman, Philip, Capt., 1018 E. 163d St., Bronx.
Alogef, Harry, Capt., 69-81 108th St., Forest Hills.
Baron, Carl, Capt., 618 Ocean Parkway, Brooklyn.
Barrett, William A., Capt., 85 Baldwin Ave., Baldwin.
Becher, Tobias, Capt., 35-30 153d St., Flushing.
Caccioppi, Thomas R., Capt., 7613 16th Ave., Brooklyn.
Carideo, Henry L., Major, 10 N. Fulton Ave., Mount Vernon.
D'Amanda, William D., Capt., 82 Fulton Ave., Rochester.
Daus, Milton J., Major, 201 S. Franklin St., Watkins Glen.
Davidson, William R., Capt., 184 Deer Park Ave., Babylon.
De Giorgio, Michele, 1st Lt., 3212 Seymour Ave., Bronx.
Earp, Ralph K., Capt., 420 E. 58th St., New York.
Favazza, Armando G., Capt., 1694 64th St., Brooklyn.
Feder, Edward P., Major, 155 E. Lincoln Ave., Mt. Vernon.
Gale, Julius P., Capt., 324 S. Wellwood Ave., Lindenhurst.
Geier, Paul B., Capt., 230 Broadview Ave., New Rochelle.
George, Henry L. Jr., Capt., 320 Holcomb St., Watertown.
Harrison, Francis F., Col., 1 Beaver St., Cooperstown.
Hartmann, Edmund M., Major, 87-88 Parsons Blvd., Jamaica.
Hartwood, Mark R., Capt., 65 South St., Auburn.
Ingegno, Alfred P., Capt., 880 Carrol St., Brooklyn.
Jenkins, Donovan M., Major, 112 South Ave., Webster.
Jensen, Frode, Major, 103 Hampshire Rd., Syracuse.
Kabnick, Arthur B., Capt., 205 W. 88th St., New York.
Kenny, Francis E., Lt. Col., 519 Delaware Ave., Buffalo.
Lamb, Albert R. Jr., 1st Lt., 162 E. 70th St., New York.
Landes, Alexander V., Major, 1706 48th St., Brooklyn.
Lapidus, Bernard, Capt., 2820 Morris Ave., Bronx.
McLaughlin, John J., Major, 202 Lark St., Albany.
McMahon, Robert E., Lt. Col., St. Vincents Hosp., New York.
Maidman, Leonard, Capt., 1321 E. 10th St., Brooklyn.
Minor, Allen H., Capt., 70 Haven Ave., New York.
Moel, Charles S., Capt., 85-32 Parsons Blvd., Jamaica, L. I.
Olson, Carl P., Major, 20 Mozart St., Binghamton.
Olszski, Bronislaus S., Capt., 217 Lake Shore Dr. E., Dunkirk.
Ostrove, Lester L., Capt., Lincoln Hosp., Bronx.
Palanker, Harold K., Capt., 93 Homer Ave., Buffalo.
Palmer, Milton A., Capt., 18 Park Blvd., Lancaster.
Pirro, Nicholas J., Capt., 110 Franklin Ave., Solvay.
Rabbiner, Max, Major, 780 St. Marks Ave., Brooklyn.
Ragosta, Ralph J., 1st Lt., 7521 17th Ave., Brooklyn.
Rather, Lelland J., Capt., 160 Columbia Heights, Brooklyn.
Rivera, Rafael M., Capt., 150 W. 87th St., New York.
Robertson, Euston S., Capt., 776 Avenue C, Arlington.
Robin, Morris J., Capt., 35-43 72d St., Jackson Heights.
Robinson, John N., Lt. Col., 1192 Park Ave., New York.
Schechter, Milton, Major, 875 W. End Ave., New York.
Schutkeker, Bruno G., Lt. Col., 300 Davidson Ave., Buffalo.
Schnur, Jacob, Capt., 1010 Bryant Ave., New York.
Staeb, Frederick D., Major, Highland Hosp., Rochester.
Stanton, Edwin Y., Major, 42-42 Union St., Flushing.
Staub, Philip L., Major, 723 LaFayette Ave., Brooklyn.
Tamse, Sidney, 1st Lt., 902 Montgomery St., Brooklyn.
Tenery, Robert M., Capt., 275 Ft. Washington Ave., New York.
Terranova, Anthony S., Major, 368 Avenue U, Brooklyn.
Untracht, Samuel, Capt., 133 20th St., Laurelton, L. I.
Urbont, Alexander R., 1st Lt., 783 Beck St., New York.
Vitagliano, Eugene, Capt., 4709 Ft. Hamilton Pkwy, Brooklyn.
Von Storch, T. J. C., Lt. Col., 15 Highland Dr. E., Greenbush.
Weisberg, Maurice A., 1st Lt., 41 Loft Ave., Brooklyn.
Zavod, William A., Major, 133 Archer Ave., Mount Vernon.

PHYSICIANS SEPARATED FROM SERVICE

North Carolina

Black, Paul A. L., Major, 218 N. 5th, Wilmington.
Bunn, Richard W., Capt., Reynolds Bldg., Winston-Salem.
Camp, Horton, Major, Camp Hosp., Pittsboro.
Farmer, William D., Major, Banner Bldg., Greensboro.
Gilreath, Robert A., Major, 719 Church St., Hendersonville.
Royster, James D., Capt., Benson.
Schwartz, Benjamin, Capt., Vet. Adm. Fac., Oteen.
Shelburne, Palmer A., Capt., 2602 Sherwood St., Greensboro.
Tart, Braston I. J., Capt., Four Oaks.

North Dakota

Arneson, Charles A., Major, 1110 8th St. S., Fargo.
Krogstad, Loranice T., Capt., Enderlin.
Schatz, George, Major, West Fargo.

Ohio

Aronoff, Nathan, 1st Lt., 36 W. Defiance St., Leipsic.
Ash, Edwin E., Major, Christ Hosp., Cincinnati.
Cook, Robert G., Capt., 3747 Dunkirk St., Cincinnati.
D'Amore, Amanto P., Capt., 1st St., Masury.
Freed, A. N., Capt., 3676 Traynham Rd., Shaker Heights.
Gray, Ralph E., Major, 1430 W. 81st St., Cleveland.
Kattus, Joseph H., Major, 2136 Highland Ave., Cincinnati.
Kaufman, Paul M., Capt., 2321 5th Ave., Youngstown.
Owen, John M., Capt., 4633 N. Dixie Blvd., Dayton.
Rawers, Clarence B., Capt., Bergholz.
Schwartz E. D., 1st Lt., 1720 Middlehurst Rd., Cleveland Hgts.
Shaheen, Gustav S., Capt., 3411 W. Tuscarawas St., Canton.
Taylor, Thomas L., Capt., Montpelier.
Tucker, Harry S., Major, 1840 Ansel Rd., Cleveland.
Urban, John P., Capt., 4475 N. High St., Columbus.
Van Buren, Harlow J. K., Capt., 201 W. Findlay St., Carey.
Wagner, John L., 1st Lt., 226 E. Main St., New London.
Welter, John A., Capt., 250 Outlook Ave., Youngstown.
Williger, Irwin F., Major, 36 N. Pleasant Ave., Osborn.

Oklahoma

Ballantine, Henry T. Jr., Major, 541 N. 16th St., Muskogee.
Nagle, Patrick S., Major, 1021 N. Lee, Oklahoma City.
Noell, Robert L., Major, 913 Med. Arts Bldg., Oklahoma City.
Price, Neel J., Capt., 131 E. 4th St., Oklahoma City.

Oregon

Adams, John M., Major, 801 Roseway Dr., Klamath Falls.
Barr, John R., Capt., 1023 Winona St., Portland.
Black, Neil F., Major, 907 Main, Klamath Falls.
Bree, Donald W., Major, 912 S.W. Vista Ave., Portland.
Caniparoli, Sante D., Lt. Col., 3264 N.E. Brice St., Portland.
Durham, Milton W., Lt. Col., 1506 6th St., LaGrande.
Earl, Charles N., Major, Cottage Grove.
Evans, John W., Major, Route 5, Box 428A, Portland.
Foster, Rae N., Capt., John Day.
Illge, Alfred H., Major, 1020 S.W. Taylor St., Portland.
Keizer, John P., Capt., 1418 N. Sherman Ave., North Bend.
Lewis, Herbert D., Major, 1115 Montello, Hood River.
McKim, Charles P., Major, 2515 1st St., Baker.
Miller, Robert F., Capt., 4229 N.E. Campaign, Portland.
Ornduff, William W., Capt., 6323 S.E. 29th St., Portland.
Sichel, Martin S., Major, 1730 S.W. Spring, Portland.
Standard, Delbert C., Lt. Col., 321 IOOF Temple, Eugene.
Underwood, F. J., Major, 6450 S.W. Parkhill Way, Portland.

Pennsylvania

Atkinson, Daniel A., 1st Lt., 132 Oakwood Ave., West View.
Baker, Roy F., Capt., Madera.
Capriotti, Octavius A., Capt., 19 E. Broad St., Hatfield.
Carter, Alfred G., Capt., 739 Wheeler Ave., Scranton.
Dickerman, Frederick A., Capt., 6th & Elm St., Watsonstown.
Dickstein, Benjamin, Major, 6013 Delancey St., Philadelphia.
Dietrich, Richard A., Capt., 421 52d St., Pittsburgh.
Diodati, Anthony D., Capt., 1526 S. Broad St., Philadelphia.
Feightner, Francis W., Lt. Col., Penn Albert Hotel, Greensburg.
Flegler, Saul M., Capt., Edgewood Rd., New Kensington.
Forcjt, Joseph M., Capt., E. Smithfield St., Mount Pleasant.
Goodman, Harry, Major, 536 Johnston St., Philadelphia.
Gregg, L. A., Lt. Col., Pasadena Dr., Fox Chapel, Sharpsburg.
Hagan, Eugene M., Capt., 904 Washington Ave., Oakmont.
Hammond, Charles P., Major, 134 N. Prince St., Lancaster.
Israel, Harold L., Capt., Sweet Water Rd., Glen Mills.
Winkler, Louis H. Jr., Capt., 921 Delaware Ave., Bethlehem.
Wood, Francis C., Col., Laurel Lane, Haverford.
Woolhandler, Harry W., Lt. Col., 624 W. 21st St., Erie.
Zeman, Erwin D., Lt. Col., 1965 Lakewood Dr., Erie.
Zimmerman, Franklin D., Capt., Schaefferstown.

Rhode Island

Beaudreault, Elphege A., Capt., 244 Lincoln St., Woonsocket.
DeNyse, Donald L., Capt., 922 Park Ave., Cranston.
Gammell, Edwin E., Capt., 1 Main St., Hope Valley.
Menzies, Gordon E., Lt. Col., W. Main St., Wickford.
Ruisi, Joseph L. C., Major, 13 Newton Ave., Westerly.

South Carolina

King, Joseph H., Lt. Col., R.R. 3, Summerton.
Melich, Edward I., Capt., 400 Waccamaw Ave., Columbia.
Pratt, John M., Major, Hickory Grove.
Walsh, John K., Capt., 421 S. Coit St., Florence.

South Dakota

Murdy, Carson B., Capt., 1219 N. Lincoln St., Aberdeen.

Tennessee

Boddie, James B. Jr., Capt., 615 Robert E. Lee Apt., Nashville.
Clarke, Charles L., Major, 2087 Cowden Ave., Memphis.
Coe, Isaac S., Capt., 1208 E. Parkway Blvd., South Memphis.
Currey, Doyle E., Capt., 1320 Lawrence, Chattanooga.
Fort, Garth E., Capt., Riverside Dr., Nashville.
Gayden, Hamilton V., Major, Franklin Rd., Nashville.
Grossman, Laurence A., Major, 3603 Central Ave., Nashville.
Higginbotham, J. M., Major, 1602 Berkeley Circle, Chattanooga.
Riggs, James W., Capt., LaFollette.
Swisher, Otto J. Jr., Capt., S. Maple St., Covington.
Thomas, Edward P., 1st Lt., 2410 Jefferson St., Nashville.
Vapner, John B., Capt., 1969 Popular St., Memphis.

Texas

Ashley, R. W., Major, (Bus) 360 E. Olmas Dr., San Antonio.
Aves, Frederick H., Major, Dickinson.
Bannister, Mortimer H., Capt., Pearsall.
Bellamy, Russell M., Major, 806 N. Sommerville, Pampa.
Bunkley, Thomas A., Major, Stamford San., Stamford.
Childs, Tilden L. Jr., Capt., 2118 Stanley St., Fort Worth.
Collins, Robert P., Major, 1411 9th St., Wichita Falls.
Cowan, William K., Major, 4028 McFarlin Blvd., Dallas.
Featherston, Elmer W., Major, General Delivery, Swenson.
Garnett, John W. Jr., Lt. Col., 904 Ft. Worth Natl. Bank Bldg., Fort Worth.
Gooch, Frank B. Jr., 1st Lt., 5315 Harrisburg Blvd., Houston.
Greenlee, Ralph G., Capt., 1107 N. 4th St., Temple.
Hardwicke, Charles P., Major, 1409 Wathen, Austin.
Hartnett, Dalton C., Major, 1015 Travis Ave., Fort Worth.
Howerton, E. E., Lt. Col., Nix Professional Bldg., San Antonio.
Hudson, Isaac F., Lt. Col., 604 E. Reynolds, Stamford.
Jacobson, Harry, Capt., Box 536, Post.
Leach, Charles L. Jr., Capt., 2319 Riverside Dr., Houston.
Loeb, Sam A., Capt., 1101 Pine St., Sweetwater.
McClure, Wayne H., Capt., Box 487, Kermit.
Mozersky, Victor, Major, 301 E. Martin St., San Antonio.
Parchman, Hugh W., Capt., Overton.
Phillips, Gordon, Capt., Haskell.
Poetter, Henry W., Capt., Cameron.
Sanford, Herbert M., Capt., Perryton.
Sears, Ernest S., Capt., 6811 Airline Dr., Houston.
Smith, Gerald S., Capt., 1301 Broadway, Lubbock.
Strickland, John H., Capt., 309 Iowa St., Alice.
Tubbs, Harry A., Capt., Scott & White Clinic, Temple.
Van Beber, J. A., Capt., 306A N. Main, Gladewater.
Wood, W. R., Major, Med. Branch, U. of Texas, Galveston.
Yates, Charles W., Capt., Rosenberg.

Utah

Belnap, Howard K., Major, 2554 Brinker Ave., Ogden.
Gaon, M. D., Capt., Med. Sect. CASC Unit 1902, Ft. Douglas.
Jackson, Henry M., Capt., 141 1st Ave., Salt Lake City.
Voss, Bernard J., Capt., Columbia.

Vermont

Judd, Lester E., Major, N. Main St., Enosburg Falls.
Moskovitz, Abraham J., Capt., 43 Willow St., Burlington.

West Virginia

Barrett, Robert S., Major, Hamlin.
Bowers, Garvey B., Major, Kimball.
Harrison, Charles S., Major, 641 Dale Ave., Clarksburg.
Scott, Charles M., Capt., Groveland Dr., Bluefield.

Puerto Rico

Cabrera, Juan R., 1st Lt., 27 Ashford Ave., San Juan.
Gelpi, William P., Major, Charity District Hosp., Rajardo.
Nieves-Colon, J. de la C., Capt., 33 Gen. Contreras St., Cayce.
Ramirez de Arellano, Max D., Capt., U. of P. R., Rio Piedras.

ORGANIZATION SECTION

MINUTES OF THE ANNUAL SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN CHICAGO, DECEMBER 3-5, 1945

(Concluded from page 1111)

HOUSE OF DELEGATES

First Meeting—Monday Morning, December 3

REPORTS OF OFFICERS

Report of the Secretary

Dr. Olin West, Secretary, presented his report as printed in the Handbook, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary.

Réport of Board of Trustees

Dr. James R. Bloss, Chairman, presented the report of the Board of Trustees as printed in the Handbook, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, with the exception of the reports of the Bureau of Legal Medicine and Legislation and the Bureau of Public Relations, which were referred to the Reference Committee on Legislation and Public Relations; the report of the Bureau of Health Education, which was referred to the Reference Committee on Hygiene and Public Health, and the Report of the Council on Industrial Health, which was referred to the Reference Committee on Industrial Health.

Supplementary Report of Board of Trustees

Dr. Bloss presented the following Supplementary Report of the Board of Trustees:

1. INSTALLATION OF PRESIDENT ON MONDAY EVENING

The Board of Trustees requests that the House of Delegates suspend the By-Laws and authorize the installation of the President on Monday evening, instead of on Tuesday evening, as provided in the By-Laws.

Dr. Arthur J. Bedell, Section on Ophthalmology, moved that the By-Laws be suspended as requested and the motion was seconded by Dr. Walter E. Vest, West Virginia, and carried.

2. DATE OF THE SAN FRANCISCO SESSION IN 1946

The date selected by the Board of Trustees for the San Francisco Session of the Association is July 1-5, 1946.

3. DISTRIBUTION BY THE AMERICAN NATIONAL RED CROSS OF DRIED BLOOD PLASMA DECLARED SURPLUS BY ARMED FORCES

The American National Red Cross has presented to the Board of Trustees a plan for the distribution of dried blood plasma declared surplus by the armed forces.

4. PROPER UTILIZATION OF SERVICES OF PHYSICIANS IN A NATIONAL EMERGENCY

The following resolution was formulated by a committee appointed by the Board of Trustees after giving consideration to a suggestion made by Dr. James E. Paullin with a view to proper utilization of the services of physicians in a national emergency:

More than 60,000 physicians volunteered and rendered distinguished service in the various branches of the military organization in the war and many more have aided civilian organizations.

During these years of war much experience has been gained by those who served which can be used for the betterment of the organization of military medical service and a more efficient

utilization of medical personnel in the medical departments of the armed forces.

The experience thus gained should be utilized for the benefit of the medical profession and for the military service in any future emergency requiring the withdrawal of many civilian physicians from medical practice.

The Board of Trustees would recommend to the House of Delegates that it authorize the Board of Trustees of the American Medical Association to appoint a committee of seven to be known as the Committee on Military Service. This committee shall include four civilian physicians who served in the war and three others. The committee will study the many communications that have been received and the suggestions made by physicians in the armed forces. The committee will also formulate policies for recommendations to be forwarded through the Surgeons General to the Secretary of War and the Secretary of the Navy expressing the views of the medical profession in planning for proper utilization of the services of physicians in any national emergency.

5. ANIMAL EXPERIMENTATION

With a view to combating legislation intended to prevent animal experimentation, the Board of Trustees has approved in principle the following statement for submission to the House of Delegates:

Much propaganda against animal experimentation has been fostered and disseminated by various poorly informed groups.

The benefits of medical research through animal experimentation have reached a majority of the people of the United States. Many lives have been saved during the war primarily by animal experimentation in the research on blood plasma and various drugs.

The benefits to mankind and to the animal kingdom have been great through the animal research in surgery and medicine, particularly related to rickets, hypertension, lockjaw, hookworm, rabies, diphtheria, diabetes and distemper.

Interference with animal experimentation would cause medicine to cease to progress in many ways.

Because there has been a determined attempt by groups to prevent further experimentation on animals, the House of Delegates of the American Medical Association approves the education of the public in the benefits both to men and to animals from animal experimentation and urges that the people of the United States be completely and thoroughly informed as to these benefits and as to the effect on further progress in research on various diseases, should such animal experimentation be forbidden in any state.

6. MUCH NEEDED ASSISTANCE TO THE PHILIPPINES

Dr. James E. Paullin, in response to a request from the Board of Trustees, made an investigation of medical conditions in the Philippine Islands while on a special mission to various islands in the Pacific area for the Surgeon General of the Navy and prepared the following report for the Board:

While we were on a special mission to various islands in the Pacific area for Vice Admiral Ross T. McIntire, Surgeon General of the United States Navy, permission was given Rear Admiral Winchell M. Craig and me to inquire into the facilities and needs of the Philippine Medical Association and the University Medical School and Hospital and to furnish you and the Board of Trustees of the American Medical Association with the results of this inquiry, thereby fulfilling your requests previously made to me. Of course you will realize that we had time to obtain only a general but fairly accurate view of the situation as it exists today.

The devastation brought on Manila as a result of the war is tremendous. Most of the beautiful public buildings, including the libraries, churches, schools and hospitals, were severely damaged or destroyed by bombings from our forces and more

so by the retreating Japanese. I am informed that the greatest damage inflicted on most of the buildings resulted from high explosives set off by the Japanese after their evacuation in order to prevent any use of the buildings by our forces.

For civilian use there are few or no telephones available. This made communication possible only by mail or personal visits. Your letter addressed to Dr. de Dios, president of the Philippine Medical Association, and Dr. Ayuyao, the secretary, was delivered by Dr. A. G. Sison, dean of the Medical School of the University of the Philippines. I was informed that Dr. Ayuyao had died and I was unable to communicate with the secretary of the society, so that your letter was given to Dr. Sison to be delivered to the secretary.

It requires but little stretch of the imagination to see what happened to the buildings of the University of the Philippines, the medical school, the hospital and the dormitories connected with this university. Many of the doctors were killed in battle or by the Japanese. At this time it is impossible to obtain a complete roster of the physicians in Manila. A very good sample of what happened is a statement from Dr. A. G. Sison, dean of the medical school and professor of medicine in the medical department of the University of the Philippines, to the effect that before the war he had 139 physicians on his staff and today he had 40.

The medical school has reopened and is the only one at this time accepting students. Twenty are enrolled in the first year class. Women are accepted in the same status as men. The hospital, which accommodated 1,000 patients before the war, is now able to take care of only 430 to 450 patients; the wards available for their use have been partially restored, but the patients are crowded. The outpatient department takes care of approximately 500 patients a day. A school of dentistry is part of the medical school. At the present time they have no students.

Not only are students who are selected for admission to the medical school those who have the best scholastic record, but from these are selected those who, after interviews with members of the faculty, are thought to have the qualities essential to make the best practitioners. After entrance into the medical department one failure in any subject is sufficient for dismissal from the school. The curriculum requires four years of college work and one year of internship, and each student is required to engage in some type of research before graduation.

The faculty at the present time is composed of forty members, and, as stated, Dr. A. G. Sison is the dean of the school and professor of medicine. His son, Dr. A. B. M. Sison, is the assistant professor of medicine and secretary of the college. Mrs. A. G. Sison, M.D., is professor of obstetrics and gynecology. We met other members of the faculty, but for the life of me I can't remember their names. Most of them are graduates of medical schools either in the United States or of the University of the Philippines Medical School.

The medical school and hospital are in need of help. They have practically no apparatus. Seven microscopes have been salvaged, and these have to serve the clinical laboratory of the hospital and also the students of the medical school. They have an old x-ray machine which they use with poor results. No high voltage therapy x-ray. There are very few surgical instruments, very few chemicals, no library, few books, very few magazines (and these are quite old), very few x-ray films. All of their hospital records accumulated since 1911 were destroyed or burned by the Japanese. The furnishings in the hospital are extremely meager. The diet is poor and the wards are excessively crowded. However, even though there is a scarcity of paper and no chart backs are available the records of patients are surprisingly good. The notes are full, the histories are good and the recorded examinations are thorough and complete.

It was really pitiful to go through their laboratories, their wards, their x-ray departments, their surgical department and to see how few supplies and how few chemicals they have, and how they would guard the little stains available. Had it not been for the kindness of the medical departments of the Navy and the Army they would not even have these supplies.

I had the pleasure of conversing with Mr. H. W. Endicott, who had just arrived in Manila and is on a commission from the United States government to advise about the disposal of surplus property. I spoke to Mr. Endicott about the needs of

the Philippine General Hospital and the Philippine Medical School, and I am quite sure that those who represent the Medical Corps of the Army and Navy will be quite in sympathy with helping in securing needed supplies for these institutions from our surplus property in this area.

It was very gratifying to me to see how willingly and admirably medical officers of the Navy and the Army were cooperating with Dr. Sison and his faculty in acting as consultants in various departments of his medical school and hospital and how they were helping as they could with teaching. It is with a great deal of pride that Dr. Sison tells of the help which he has received from these volunteer workers of the Medical Corps in both services.

Three of the physicians on the faculty of the Philippines University Medical School have been granted fellowships by the Rockefeller Foundation to come to the United States to study various subjects, one in November, one in December and the other in January.

At the present time the greatest needs of both of these institutions are as follows:

1. A considerable number of all textbooks in medicine, surgery and the various other specialties are needed.
2. They need current medical journals. All are interested in medical journals and they are treasured as extremely valuable property. I happened to see on Dr. Sison's desk an issue of *THE JOURNAL* published in June, which he had just received.
3. The need for surgical instruments of all kinds and accessory apparatus for giving anesthesia and for the care of orthopedic patients is great. They have practically none.
4. Microscopes are needed, as already stressed.
5. X-ray apparatus for fluoroscopic work, x-ray and high voltage therapy, electrocardiographs, chemicals of all kinds for the chemical laboratory, and glassware of all kinds are needed. As a matter of fact the need is great for all supplies to equip a modern hospital.

I am convinced that the American Medical Association can be most helpful to these people by stressing their needs to the profession in this country and through the Surgeon General of the Navy and the Surgeon General of the Army to request that any surplus property not being used for our hospitals at Manila be disposed of through the proper agency to the civilian hospitals in the Philippine Islands and to the University of the Philippines.

To say that there is a tremendous need for physicians in all of the islands of the Philippines to take care of the civilian population is expressing mildly a situation which demands the greatest attention. It requires not only an increase in numbers of doctors but an increase in quality. What has already been accomplished in these localities by the Medical Corps of the Navy and the Army is remarkable, but from our observation we have only scratched the surface of this situation. The Department of Public Health, which is functioning now, is going to need a great deal of help, and until there is better hygiene and better sanitation there will never be better health, and this comes about, as you know, through education of the population as well as better education of physicians.

I hope that this short report will furnish you with a sufficient amount of information to cause the Board of Trustees of the American Medical Association to take the proper steps in helping to accomplish some of the immediate needs of these institutions and of these peoples.

It is believed that most of the activities of the Philippine Medical Association will revolve about the university until communications are better established.

The Board of Trustees has arranged to provide subscriptions to the medical periodicals published by the Association and to send other medical literature thus available to the Philippine Medical Association and to the University Medical School and Hospital. The Board feels that this matter is of sufficient importance to be brought to the attention of the House of Delegates with the suggestion that it urge the United States Public Health Service and the chief of the Federal Security Agency to transfer some of the supplies and medical equipment in the Philippines to the Philippine Medical Association and the University Medical School and Hospital.

7. A PLAN WHEREBY MEDICAL STUDENTS OF APPROVED MEDICAL SCHOOLS CAN BECOME STUDENT MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The Board of Trustees gave consideration to the suggestion adopted by the House of Delegates in 1944 on the recommendation of the Council on Medical Service and Public Relations directing the Board of Trustees to work out a plan whereby students in approved medical schools can become student members of the Association and to prepare the necessary change in the Constitution and By-Laws for submission to the House of Delegates in order to accomplish this purpose.

The Board appointed a committee to draw up resolutions on the subject, which, after approval by the Board, were referred to the Judicial Council.

The Judicial Council made a report to the Board, which then referred the matter back to the Council on Medical Service and Public Relations. That Council at its meeting on Saturday of last week voted to suggest to the House of Delegates that it request state associations to work out the problem on a state level by making possible affiliation with state associations and county societies on an informal basis.

The report from the Judicial Council reads:

REPORT FROM JUDICIAL COUNCIL ON PLAN WHEREBY MEDICAL STUDENTS IN APPROVED MEDICAL SCHOOLS CAN BECOME STUDENT MEMBERS OF AMERICAN MEDICAL ASSOCIATION

The recommendation in the report of the Council on Medical Service and Public Relations requesting "the Board of Trustees to work out a plan whereby students in approved medical schools can become student members of the Association and that the Board prepare the necessary changes in the Constitution and By-Laws for submission to the House in order to accomplish this" and referred by the Board of Trustees to the Judicial Council was considered by that body at a meeting held in Chicago on Dec. 1, 1944. Drs. Donaldson, Noland, O'Shea and Cuniffe were present.

The Council in its report explains the desire for this new membership "so that the students may be inculcated with the ideals and ethics of medicine as early as possible." The suggestion by the reference committee is that this new membership be limited to students in their clinical (third and fourth) years.

At present many county societies have intern members who are not affiliated with the American Medical Association. They attend meetings of the medical society, hear discussions, take part in the activities of the society, learn the advantage of attending these meetings for the acquisition of additional scientific knowledge and see the practical application of the Principles of Medical Ethics of the American Medical Association and the rules of conduct of the constituent association. These can best be learned, it seems to us, in the county society. A membership such as proposed in the American Medical Association, without membership in the county society, would provide members with but one advantage which might possibly help in attaining the end desired by the Council. Medical students now have the same privilege of subscribing to THE JOURNAL as other members, and from THE JOURNAL it is very possible that they would profit in such a manner that it would be worth while both to them and to the medical profession.

It might be well to consider that, although the American Medical Association has no power to control the selection of its members by component societies, yet much might be accomplished by explaining to these county organizations the value of receiving into organized medicine the students in their clinical years.

These memberships would be local, but the students could best be inculcated with the ideals and principles of ethics and with some of the problems they will be compelled to meet in the practice of medicine. This is the only place, we feel, that this can well be done; and a request to our constituent associations to urge the county societies in whose territory is located a medical school or schools to found such a membership may accomplish a great deal. The state of Connecticut has already begun a movement to have the county societies recognize such membership. These students would not be members of the American Medical Association, for it is necessary to hold a

degree of Doctor of Medicine or its equivalent in medicine to be eligible for membership in the American Medical Association. This provision was adopted as part of our Constitution and By-Laws only a few years ago, to be continued as it has been from inception to the present time, a society of graduate physicians. Some component societies accepted as members some of the practicing cultists in a state wherein that cult was legalized. We have no power to compel the component societies to accept or refuse membership, but we can refuse to accept their members who do not meet our requirements as members of the American Medical Association. This proposed recommendation from the Council would compel us to change our Constitution and By-Laws to admit members who are not physicians and thereby change very greatly the character of our Association. Some of these might never become physicians but might practice one of the various cults and could then advertise as a former member of our Association. We believe the least that must be demanded for membership is the successful completion of the recognized medical course.

Members of the American Medical Association, under the present Constitution and By-Laws, are members of constituent state and territorial medical associations, and members of constituent associations are first members of component county or district medical societies. To amend the Constitution and By-Laws of the American Medical Association so as to make it possible to take in medical students as members would be a drastic measure that would in effect upset the whole plan of medical organization in the United States as represented by component county or district societies, constituent state and territorial associations and the American Medical Association. We believe that even if it should be desirable to take medical students who have not graduated into membership in the American Medical Association, such action could not reasonably be taken in a manner that would ignore the component and constituent associations.

As the result desired by the Council can in this instance, we believe, be accomplished by the means herein suggested, we feel that the Constitution and By-Laws should not be amended. However, we heartily endorse the feeling that the result visualized by the Council is the early inculcation of medical students with the ideals and ethics of medicine and we should strive to gain this end. We feel it can be brought about through special memberships in the component societies as described herein. We believe this should be accomplished without amending the Constitution and By-Laws.

This opinion was concurred in by all members of the Council.

8. RESOLUTION REGARDING ADMISSION OF MEMBERS OF MEDICAL STAFF OF VETERANS ADMINISTRATION TO FELLOWSHIP IN ASSOCIATION

The resolutions proposing amendments to the Constitution and By-Laws referring to the granting of Fellowship to medical officers of the veterans' facilities, which were referred to the Board of Trustees last year, were given consideration by the Board and were referred by it to the Judicial Council. That Council submitted a report to the Board which the Board now wishes to refer to the House of Delegates with the suggestion that in view of the probable reorganization of the Veterans Administration it would not seem wise to adopt any new policy until that reorganization has been effected except as far as the local societies may take action with respect to these physicians.

REPORT FROM JUDICIAL COUNCIL ON RESOLUTION REGARDING ADMISSION OF MEMBERS OF MEDICAL STAFF OF VETERANS ADMINISTRATION TO FELLOWSHIP IN ASSOCIATION

The resolution proposing amendments to the Constitution and By-Laws referring to Fellowship for medical officers of the veterans' facilities, introduced by Dr. A. W. Adson in the House of Delegates at the 1944 session and referred by the Board of Trustees to the Judicial Council, was considered by that body at a meeting held in Chicago on Dec. 1, 1944. Drs. Donaldson, Noland, O'Shea and Cuniffe were present.

This resolution requests the American Medical Association to amend its Constitution and By-Laws for the following reasons:

1. To restore Fellowship to members of the veterans' facilities who have been reassigned in states where they hold no licensure

and thus are unable to transfer membership and have lost their membership in the constituent association.

2. To restore Fellowship to those who lost membership in county and state associations through transfers without maintaining their original county and state membership.

3. This resolution also states that a loss of membership in county and state medical associations automatically deprives medical officers of the veterans' facilities of membership and Fellowship in the American Medical Association.

According to the Constitution and By-Laws, a medical officer of the veterans' facilities holding membership in any constituent association can retain that membership when transferred to a different state with the proviso that he does not engage in the private practice of medicine. This allows him to retain his Fellowship through membership in his original state association. A member of the veterans' facilities working on a part time basis must have licensure in that state and therefore must affiliate with a county society within the period of one year or lose his membership. This resolution does not apply to this class but is a petition that we amend the Constitution and By-Laws of the American Medical Association in order to restore Fellowship to those members who have lost it either through carelessness, lack of interest or knowledge of the Constitution.

The second is a request that the members of the veterans' facilities be accepted as members and Fellows of the American Medical Association under the same conditions as pertain to the officers of the Army, Navy and Public Health Service.

There are some disadvantages connected with a membership in the American Medical Association when such membership has no affiliation with the county society. These members are prone not to attend local meetings and may not understand or sympathize with the problems confronting members of that body in the general practice of medicine. They are more likely not to have an awareness of the policies that are currently adopted by the American Medical Association and in general are not acquainted with the activities of organized medicine in the state and county. They are not under the control or guidance of the county society and, we believe, it is generally admitted that the attendance of county society meetings is one of the best means not only of deriving scientific education but also of keeping informed of proposed or accepted economic activities.

It is alleged that medical officers of the veterans' facilities were chosen in a rather haphazard manner in the beginning, many owing their appointments to political recommendations. It may be that considerable improvement has been made in the method of selection; however, at present there is no qualifying examination necessary for appointment and while something has been accomplished to augment the medical training there is no comparison with that provided for those members in the Army, Navy and Public Health Service, where postgraduate courses and successive examinations are demanded of their officers. There is therefore no similarity between the standards required by the veterans' facilities and the Army and Navy medical services. One is qualified by examination and its members are compelled to take special training, postgraduate courses and successive examinations, all of which does not hold true in the veterans' facilities.

The first part of the resolution, which is predicated on the assumption that Fellows of the American Medical Association automatically lose their membership and Fellowship when transferred to a different state, is not supported by the Constitution, which permits them to retain their membership and Fellowship through their original constituent association.

The second request for a change of the Constitution and By-Laws to permit members of the veterans' facilities to become Fellows under the conditions enjoyed by the Army, Navy and Public Health Service was considered at length by the Council. It was felt that, since the same conditions and requirements are not demanded for admission to their respective services, appointments are made without examinations and without postgraduate education, and the standards required of medical officers are so much easier than those of the Army, Navy and Public Health Service, we do not find sufficient merit to warrant a change in the Constitution and By-Laws of the Association.

The members of the Judicial Council were unanimous in the recommendation to the Board of Trustees that this resolution be not supported.

9. CELEBRATION OF CENTENNIAL OF ASSOCIATION

The Board of Trustees wishes to remind the House of Delegates that the one hundredth anniversary of the founding of the Association occurs in 1947 and that plans are under consideration for celebrating that occasion during the annual session in Atlantic City. Meantime a history of the American Medical Association is in process of development and it is proposed to begin its publication in 1946 so that it will be completed in time to permit publication of the complete work for distribution at the time of the Atlantic City session.

The Board would suggest that the House of Delegates authorize the Speaker to appoint a committee to work with the Board of Trustees in the development of a program for the celebration of the Centennial in Atlantic City.

LEGISLATION

A bill, H. R. 4717, proposes to establish a Department of Medicine and Surgery in the Veterans Administration. This bill in its present form provides, among other things, that the chief medical director and the deputy medical director shall be qualified doctors of medicine and that any other person to be eligible for appointment in the medical service of the department of medicine and surgery must be a citizen and must "hold the degree of doctor of medicine or of doctor of osteopathy from a college or university approved by the Administrator, have completed an internship satisfactory to the Administrator and be licensed to practice medicine, surgery or osteopathy in one of the states or territories of the United States or in the District of Columbia."

The Board brings this bill to the attention of the House of Delegates in the hope that definite action will be taken to reaffirm policies already established or to establish new policies.

The Board would call attention to the President's message to the Congress, which includes a health program and which has been introduced with the Wagner bill. This is a matter which the Board feels should be given serious consideration.

The Speaker referred sections 2, 3, 4 and 9 to the Reference Committee on Reports of Board of Trustees and Secretary, sections 5 and 10 to the Reference Committee on Legislation and Public Relations, sections 7 and 8 to the Reference Committee on Amendments to the Constitution and By-Laws, and section 6 to the Reference Committee on Postwar Planning.

Treasurer's Report

The Speaker referred the Report of the Treasurer as printed in the Handbook to the Reference Committee on Reports of Board of Trustees and Secretary.

Report of Judicial Council

Dr. Edward R. Cuniffe, Chairman, presented the Report of the Judicial Council as printed in the Handbook, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Report of Council on Medical Education and Hospitals

Dr. Ray Lyman Wilbur, Chairman, presented the report of the Council on Medical Education and Hospitals as printed in the Handbook and the following supplementary report, all of which was referred to the Reference Committee on Medical Education:

Supplementary Report of Council on Medical Education and Hospitals

The Council is in full accord with the statement adopted by the Committee on Postwar Medical Service regarding the report of Vannevar Bush to the President on a program for postwar scientific research. This report was published in THE JOURNAL, October 6, pages 466 and 467, and concludes that the Bush report should be supported, subject to certain qualifications set forth, and that "the various agencies represented in the Committee on Postwar Medical Service give consideration to the contents of the subcommittee's report in their public pronouncements and in congressional hearings in which they might be invited to participate and that consideration of proposals and legislation for new federal programs to assist in medical research within restricted areas or specialties of medicine should be delayed until the establishment of some such comprehensive program as that proposed in the Bush report covering all the fields of medicine and natural sciences."

The Council is of the opinion that legislation following the Bush recommendations would be far superior to those of section 213 (pp. 63-65) of Senate Bill 1606 providing for "grants-in-aid for Medical Education, Research and Prevention of Disease and Disability." The provisions of section 213 lack clarity and are unsound. The Bush recommendations are especially superior to the provisions of section 213 in the plan for the establishment and organization of the National Research Foundation.

Respectfully submitted,

RAY LYMAN WILBUR, Chairman.
H. G. WEISKOTTEN.
REGINALD FITZ.
HARVEY B. STONE.
CHARLES GORDON HEYD.
RUSSELL L. HADEN.
JOHN H. MUSSER.
VICTOR JOHNSON, Secretary.

Report of Council on Scientific Assembly

Dr. A. A. Walker, Chairman, presented the report of the Council on Scientific Assembly as printed in the Handbook, which was referred to the Reference Committee on Sections and Section Work, and the following supplementary report, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

Supplementary Report of Council on Scientific Assembly

To the Members of the House of Delegates of the American Medical Association:

The Council on Scientific Assembly recommends amendment to the By-Laws of the American Medical Association dealing with the scientific sections as follows:

Change the word "first" in the second line and the word "final" in the third line of section 3, chapter XV, to read "last" and "second" respectively, and delete the last two lines of that section, so that section 3, chapter XV, will read:

SEC. 3. ELECTION OF OFFICERS.—The election of officers of the several sections shall be the last order of business of the second meeting of the section at each Scientific Assembly. To participate in the election of any section a Fellow must have indicated on registering that he desires to affiliate with such section.

Change section 4 (a) of chapter XV by deleting the words "and shall see that proper arrangements are made for his section at the Scientific Assembly," so that section 4 (a) will read:

SEC. 4. DUTIES OF SECTION OFFICERS.—(a) Chairman.—The chairman shall preside at the meetings of the section and shall perform such duties as usually belong to such an office, or as may be provided by the by-laws of the section. He shall cooperate with the secretary in arranging the program.

Change the first three lines of section 4 (e), chapter XV, to read:

(e) The secretary of the section, with the aid of the Secretary of the American Medical Association, shall provide for meetings of the section.

Change the word "thirty-five" in the fourth line of section 10, chapter XV, to the word "sixty," so that the first four lines of section 10, chapter XV, will read:

SEC. 10. TIME AT WHICH TITLES MUST BE IN.—Titles of papers to be presented to the section must be in the hands of the secretary of the section at least sixty days before the first day of the

Change section 15 of chapter XV of the By-Laws to be section 16, and insert as new section 15 the following:

SEC. 15. PRESENTATION OF RESOLUTIONS.—No resolution shall be presented before any section later than noon on the second day of the annual session.

Respectfully submitted.

A. A. WALKER, Chairman.
FREDERICK A. COLLIER.
CLYDE L. CUMMER.
EDWARD L. BORTZ.
CHARLES H. PHIFER.

ROGER I. LEE, President-Elect.
MORRIS FISHBAIN, Editor, THE JOURNAL. } Ex officio.
OLIN WEST, Secretary.

Report of Council on Medical Service and Public Relations

Dr. E. J. McCormick, Chairman, presented the report of the Council on Medical Service and Public Relations as printed in the Handbook, which was referred to the Reference Committee on Legislation and Public Relations except the portion of the report referring to amendments to the Constitution and By-Laws, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws. The supplementary report presented by Dr. McCormick was referred to the Reference Committee on Postwar Planning except that portion which concerns postgraduate medical education in hospitals, which was referred to the Reference Committee on Medical Education:

Supplementary Report of Council on Medical Service and Public Relations

REPORT ON THE SECTION ON PLACEMENT OF MEDICAL OFFICERS

Whereas, the Conference on Public Relations held October 19 and 20 made the following recommendations in regard to the placement of medical officers:

Intern Resident Policy: "It is recommended that the American Medical Association request the Procurement and Assignment Service and the Navy, Army and the Public Health Service to ascertain at the earliest practicable time the future policy relating to the deferment of medical officers to serve as residents in order that hospitals may know the extent to which they may offer additional opportunities to returning veterans to serve as residents."

(This has already been accomplished since the recommendation was made.)

Payments Under Public Law 346: "It is recommended that all discharged medical officers be given terminal leave pay at the termination of their active duty and prior to the expiration of such accrued leave as they may have, thus enabling them to participate immediately in the benefits provided by Public Law 346 (78th Congress, G. I. Bill of Rights). Such a procedure will enable the returned medical officer to commence immediately his training in hospitals or medical schools after leaving the armed services."

Approved Hospital Residencies: "It is recommended that the Council on Medical Education and Hospitals be urged to set up at once a method for the more prompt approval of hospitals for residencies and consider the advisability of giving some temporary approval until formal inspections can be made." The Council on Medical Education and Hospitals and the Specialty Boards are now exploring these possibilities.

The Bureau of Information: "The Bureau of Information of the American Medical Association should be established in a permanent form and maintain adequate records of each physician in the United States from which county and state medical societies could obtain information. The Bureau of Information should also, by the establishment of a cooperative monthly reporting system with state societies, be kept informed of areas needing physicians and from time to time seek information either directly or through state medical societies from individual physicians concerning location, type of practice and other relative data.

"Each state medical society should be urged to establish an information service. This state information service should collect from various public and private agencies data relating to medical facilities, medical personnel or medical needs and other information concerning medical care within the state. This information service should at all times be in a position to furnish information concerning areas in need of physicians and a complete picture of the medical facilities and the physical and economic aspects of any community within the state.

"The American Medical Association should be urged to provide advice or service to such state information services relating to methods of organization and procedure and aid the state services in developing a usefulness to the medical profession and to the people of their states."

Therefore, the Council on Medical Service and Public Relations recommends that the House of Delegates approve these proposals.

Dr. McCormick asked that members of this Council be permitted to introduce resolutions that came from the public relations conference held a short time ago, but the House recessed for luncheon at 1:20 p. m. to reconvene at 3 p. m.

Monday Afternoon, December 3

The House of Delegates reconvened at 3 p. m. and was called to order by the Speaker, Dr. H. H. Shoulders.

Supplementary Report of Council on Medical Service and Public Relations

Dr. E. J. McCormick, Chairman, stated that each chairman of a round table conference held at the Council's conference on October 19 and 20 would like to introduce a report of his conference.

1. Dr. A. W. Adson, Minnesota, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

REPORT OF THE SPECIAL COMMITTEE OF THE CONFERENCE ON VOLUNTARY PREPAYMENT MEDICAL CARE PLANS

Whereas, voluntary prepaid medical care programs, sponsored and operated by the medical profession in many parts of the country, are providing the means whereby millions of persons are able to obtain good medical care and hospital service on a budgeted basis; and

Whereas, this medical care has been rendered in a manner highly satisfactory to both patient and physician; and

Whereas, there are forty-seven voluntary plans in operation in twenty-four states, with almost every other state medical society in the process of developing plans; and

Whereas, in spite of this development some areas of the country have no such programs in operation at the present time; and

Whereas, these voluntary prepayment plans are based on the intrinsic American principles of personal initiative and personal responsibility; and

Whereas, the voluntary type of prepayment plan is to be preferred, in the interest of the people's health, to compulsory care under political control; and

Whereas, a large proportion of the people desire prepayment medical care programs; therefore be it

Resolved, that the House of Delegates take immediate steps to encourage the development of a national voluntary prepayment medical care plan: for the purpose of covering areas not now served by plans, for the purpose of assisting in the enrolment in local plans of national enrolment groups and to serve until such time as all states have their own plans; and be it further

Resolved, that the American Medical Association's Council on Medical Service and Public Relations be instructed by the House of Delegates to take immediate steps to:

1. Coordinate the activities of all prepayment medical care plans now in operation.

2. Foster the development of such plans in those areas where there are none.

3. Educate physicians and the public as to the functions of voluntary prepayment plans and the need for supporting them; and be it further

Resolved, that the officers and committees of every state medical society be urged by the House of Delegates to secure prompt action by their state societies in inaugurating new or increasing the benefits of existing prepayment medical care programs in every state.

Respectfully submitted,

JAMES R. MILLER, Chairman.
A. S. BRUNK.
W. C. CHENEY.
MARTIN I. OLSEN.
JULIAN PRICE.
CARL VOHS.

2. Dr. John H. Fitzgibbon, Portland, Ore., presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

REPORT OF THE SPECIAL COMMITTEE OF THE CONFERENCE ON PUBLIC RELATIONS

The section agreed on the importance of establishing two types of public relations effort: one concerned with the members of the medical profession and various medical organizations, the other concerned with the relations of medicine to the public. The committee was agreed that thorough understanding of public relations by the medical profession is a necessary preliminary to the establishment of efficient public relations with the public and urged on the American Medical Association intensified efforts toward extending such an understanding through the state and county medical associations.

The difficulty of impressing physicians with the need that they inform themselves concerning current problems in social medicine and in medical economics lies in the fact that many physicians do not read the material coming to them through national, state or local medical publications. The proposal has been made that new technics, such as specific direct-by-mail education or more meetings designed particularly to elucidate medical economics subjects constitute a part of an extended program for medical public relations. The committee calls attention to the value of the regional meetings of the Council on Medical Service and Public Relations.

In the field of public relations for the public, attention is called to the following technics and proposals which were discussed by this section:

A. Community Health Conferences: In some areas public relations have been immensely benefited by the creation on a community basis of an organization including representatives of the medical and allied professions, the social agencies, management, labor, education and the public concerned with promoting an understanding of health problems and a discussion of the various methods by which medical service may be extended and local problems solved.

B. Radio: The section heard an extended discussion of the use of radio on a national scale by the dramatized network program, the use of prepared records in the form of drama, dialogue and prepared addresses syndicated through local stations, and the use of other radio technics. Among the problems chiefly discussed were the securing of free time as compared with paid time on the radio, the use of radio for health education and for discussion of social and political problems and the creation of special agencies for utilization of radio such as the effort now being developed in Michigan. The committee representing the section has no conclusions to offer except to point out that the use of radio for health education and for propaganda purposes is still experimental and that within certain limitations medical societies may well test the effects, in their own areas, of the various technics as well as others which they may create independently. In general, the committee feels that the purchase of time by medical societies either for health education or for informative purposes is questionable, particularly since there are definite restrictions on not-for-profit organizations having to do with funds expended for political purposes. Preferably medical programs should be educational and noncontroversial. Numerous opportunities exist whereby the point of view of medicine may be expressed on well established programs dealing with controversial subjects.

C. Press: The section heard a discussion on the press relationships of the headquarters office of the American Medical Association and also statements from other sections of the country as to the various ways in which the press is being used to educate the public regarding medical policies. These include a Texas program which involves syndication of cartoons and articles in the Texas press, a program in Arizona involving the purchase of space for health education and other material, and programs in which county societies and commercial medical agencies purchase space for informative material. Much is made of the argument that the purchase of some newspaper space creates a kindly attitude on the part of the press toward the medical profession. The committee believes

that here also local considerations must govern both the attitude toward these procedures and the funds to be expended in this manner.

D. Motion Pictures: Already some medical societies are experimenting with the use of motion pictures for health education. Thus far there do not seem to have been made available any motion pictures in the social medical field other than perhaps the "March of Time" program on medical care. The Michigan State Medical Society suggests such experimentation in the field of health education. The Walt Disney films have prospected a considerable number of pictures made with the assistance of federal agencies. In Oklahoma a program is under way for the development of two and three minute trailers on health education subjects to be circulated through all the motion picture houses in the state of Oklahoma. Through the Committee on Medical Motion Pictures of the Bureau of Exhibits of the American Medical Association measures are now being taken to extend to the medical profession and to the public the motion pictures in the field of health developed by various branches of the armed forces.

E. Bureau of Exhibits: The Bureau of Exhibits discussed the value of exhibits of various types. The committee feels that local county medical societies should become more familiar with the exhibit material and the facilities available for the extension of exhibits through the headquarters office and utilize them to the utmost. In several communities the Variety Clubs have become interested in health as their major project. In Chicago the Variety Club devotes its activities to the support of a sanatorium for rheumatic fever. In Minneapolis the Variety Club proposes to construct a building for patients with heart disease as a part of the University of Minnesota Medical School. In Oklahoma the Variety Club has established a health center and proposes to include with it a division for health education and an exhibit.

A proposal was made from Texas that both the American Medical Association and the individual state medical associations engage more liberally in the employment of professional public relations counsels with a view to utilizing such expert services as consultants for the organization of medical society public relations experiments and in various other ways. The California Medical Association utilized professional public relations counsel in analyzing the public opinion of California on medical service. A similar procedure was followed in Michigan. In Texas the state medical society has retained public relations counsel for advice in the development of its program. Several other states also have recently engaged such services. The committee representing the Section on Public Relations urges that the Board of Trustees of the American Medical Association give special consideration to the extent to which such public relations services may be utilized by the Association.

In understanding the public relations effort of medicine, the committee would call attention to the fact that it is now generally recognized that the relations of the individual physician to the individual patient in the United States are on a substantially sound basis. In other words, the public does not express, in general, resentment against the individual physician. The surveys seem to have shown that the public acceptance of the American Medical Association and its policies is favorable so far as concerns scientific progress, health education and protection of the public against inferior medicine and quackery. Antagonism of some elements of the public toward medical organizations seems to rest on the basis that opponents of organized medicine offer a specific program which promises complete medical care on what seems to be a relatively small financial outlay, whereas the medical profession has not yet come forward with a specific program for the extension of medical service on a nationwide basis with a system of payment easily available and sufficiently attractive to insure early enrolment of a large proportion of the public. The task of public relations would be rendered much easier if those concerned could be put in possession of a constructive program which they could promote to the public rather than in a position of continuous defense against programs coming from other sources.

Respectfully submitted,

A. S. BISTOW.
THEODORE WIPRUD.
MORRIS FISHBEIN.
JOHN H. FITZGIBBON.

3. REPORT OF THE SPECIAL COMMITTEE OF THE CONFERENCE ON FOURTEEN POINT CONSTRUCTIVE PROGRAM

Dr. Louis H. Bauer, New York, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

You recall that last June the Council on Medical Service and Public Relations and the Board of Trustees issued a fourteen point constructive program. This had considerable circulation. Some of the criticisms of it were that the interpretations were not there; just what did these points mean?

Consequently, interpretations of those fourteen points have been made and methods of implementing them have also been made. I am sorry that we do not have a reprint of this whole matter, but you were given this morning a copy of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for December 1 and on page 945 you will find an article entitled "Medical Care for the American People" which covers the fourteen point program, the means of interpretation and the methods of implementation, and I shall not read that to you. It is rather long, it would take nearly a half hour to read it, but you all have it and some of you have had a chance to peruse it.

I will just comment on it briefly. We have been criticized so much because we do not have a positive program but a negative one. Now this program is positive. Of the fourteen points there is only one of them that is of a negative character. That is the one dealing with socialized medicine. We feel that the program might be rearranged and the topics classed into four different groups: The first refers to those that are primarily educational. Right here I should like to interpolate that I was greatly in sympathy with Dr. Kretschmer's remarks this morning in speaking of the county medical society. The county medical society has been waning in its influence, and I think one reason there is that we are too much overorganized in medicine. There are too many subdivisions and too many meetings and the result is that doctors neglect their county society, and if one does go to a county society meeting one is fortunate to see 10 per cent of the membership there. It is usually the same 10 per cent always in meeting after meeting.

We cannot get very far unless we can interest the members of the profession in our immediate problems and not leave them in the hands of a few like this House of Delegates and the house of delegates of our state societies.

The second group refers to those that call for positive legislation. The third group refers to those that call for positive action but not necessarily legislative action, and the fourth group refers to those that we call negative, namely pertaining to the Wagner-Murray-Dingell bill and other types of vicious legislation. On page 948 of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for Dec. 1, 1945, in the interpretation of item 12 there is already a little obsolescence, although it was written less than two months ago. A new Wagner-Murray-Dingell bill has been introduced and comments appearing in THE JOURNAL are on the previous one. Most of them are still pertinent to this same bill. We have prepared an amendment to this but, as the Board of Trustees has referred the matter of the President's message and this bill to the House, which will draw up its own policy on these subjects, it did not seem wise to have two reports on the same subject. We merely suggest that whatever the House adopts in this regard be implemented into the official interpretation of this twelfth point.

I think it is very important that we have not only education of the public in making this positive program one which would be effective but that we have unity among ourselves in carrying it out. We cannot go very far if we are a house divided against itself. I feel that it is time that we cleared up the word "reactionary." The people who are opposing compulsory sickness insurance have called us reactionary. I know of nothing which is more reactionary than compulsory sickness insurance, for which there have been proposals for over thirty years in this country and the various states, and for a number of years nationally.

It is the same old proposition that dates back to Bismarck with a few new dressings added to it in the hope that it will delude the public into thinking it is something new. It is, of

all things that have been proposed for delivery of medical care, the most reactionary. I think it is time we caught them with their own stick.

Now we have a lot of problems thrust on us, but I don't think we should adopt a defeatist attitude. I have heard doctors say "This is inevitable, we might as well get on the bandwagon and go along with it. We can't stop it." Of course we can't stop it if we take that attitude. There is a paragraph in this article on that very subject and it says that the only thing inevitable is the—I will quote: "Investigation of specific symptoms usually reveals that the only inevitable feature of the march toward collectivism is the determination of the little group which wants to collectivize."

We defeated other bills of this character and I am certain that if everybody will work together and get the profession itself as a whole interested, and not just a few, we can defeat this.

Well now, gentlemen, we have our troubles and they seem to be increasing; but if our opponents have any idea we are ready for the hospital they are due for a rude awakening.

4. REPORT OF SPECIAL COMMITTEE OF THE CONFERENCE ON LEGISLATION

Dr. James R. McVay, Missouri, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

Whereas, the Conference on Public Relations held October 19 and 20 made the following recommendations in regard to legislative matters:

"We highly commend the opening and development of the Washington office. In its first year of operation it has demonstrated its usefulness and the committee recommends its further expansion and that necessary financial support be continued.

"We further recommend that each state association be invited to appoint a special national legislative committee, consisting of at least five men composed of the president, secretary and three other members, in those states which do not now have active legislative committees. The function of this committee will be to determine the opinions and wishes of the profession and to keep the Council office and the Washington office informed of the attitude of the Senators and Congressmen from their respective states. The Council and the Washington office will in turn continue to disseminate information regarding legislative action and opinions expressed by members of Congress from various states. A two way flow of information is thus encouraged. In view of recent national legislative developments it is recommended that the House of Delegates urge intense activity of each state committee."

Therefore, the Council on Medical Service and Public Relations recommends that the House of Delegates approve these proposals.

5. REPORT OF SPECIAL COMMITTEE OF THE CONFERENCE ON EXTENSION OF THE EMERGENCY MATERNAL AND INFANT CARE PROGRAM, POSTWAR

Dr. Thomas A. McGoldrick, New York, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

The conference unanimously disapproves the present super E. M. I. C. bill, S. 1318, and calls on the members of the entire medical profession for personal disapproval.

Whereas, it has been authoritatively and repeatedly announced by the Children's Bureau that the E. M. I. C. would be completed six months after termination of the war; and

Whereas, we feel that the objects of this program have been attained, viz. to sustain "the morale of the soldier" and it has been accomplished through the cooperation of the medical profession; and

Whereas, the need of this emergency measure is rapidly diminishing in importance; and

Whereas, there is a definite move to continue this program and provide for its application to the people of the entire United States and with widened scope and expanded power centralized in the Children's Bureau (S. 1318, Pepper bill); and

Whereas, we feel this plan should not have general application throughout the United States because (a) there is no real need for the continuation and expansion of this wartime measure, (b) such compulsory plans are not consistent with good care, excellence of service or American principles, (c) because the inclusion of children to the age of 21 is not required and their medical needs can be met more efficiently in other ways and (d) no health work or medical service that can be rendered by a state or any of its political subdivisions should be administered or controlled by the federal government or any federal bureau; therefore be it

Resolved, that the present Medical Advisory Committee to the Children's Bureau is not truly representative of the entire medical profession.

Any program of that bureau must be administered through the state medical associations, which should be represented; and be it further

Resolved, that the present advisory and steering committees to the Children's Bureau be abolished and a new committee be established which shall consist of one representative from each state medical association to be designated by that association, and representatives from such other medical organizations as have a direct interest in the functions of the Children's Bureau selected by these organizations; and be it further

Resolved, that since the Children's Bureau is not properly related to the Department of Labor it should be transferred to the Federal Security Agency until such time as all health and medical activities of the government are segregated into a single department; and be it further

Resolved, that the fourteen point program of the American Medical Association, and such resolutions as may be adopted by this conference, be forwarded through the proper channels to the Children's Bureau and the Federal Security Agency to bring before them the policies of the profession on the medical economics of maternal and child welfare; and be it further

Resolved, that, in the distribution of any funds appropriated by the Congress for health and medical services for the use of the separate states, the state medical associations be integrated into the control of the expenditure of such funds; and be it further

Resolved, that the American Medical Association, through the proper channels, be requested to take action to present the foregoing resolutions to the proper authorities and endeavor to have them put into effect.

It is recommended that every state medical association through the members of its component societies personally place before their representatives in Congress the defects in the bill, the harm that would result from its enactment into law, the dangers resulting from compulsory central government measures and the retardation of our medical progress and also emphasize the medical policies favored and promulgated by these resolutions.

A copy of the recommendations of the general conference on the super E. M. I. C. bill, S. 1318, should be forwarded to every representative in the Congress, to the Secretary of Labor, to the Federal Security Agency and to every state and county medical society.

Report of the Committee on Postwar Medical Service

Dr. Ernest E. Irons, Chairman, presented the following report, which was referred to the Reference Committee on Postwar Planning:

At the meeting of the Board of Trustees on Feb. 18 and 19, 1943 Dr. James E. Paullin, then President-Elect of the American Medical Association, presented a plan for postwar medical service. The Board of Trustees endorsed the proposition that the American Medical Association take leadership in the matter with the cooperation of committees of the American College of Physicians and the American College of Surgeons, and a joint committee was formed. The first meeting of this joint committee was held in Chicago on June 5, 1943. It was largely exploratory, and the general objectives were discussed.

The matter came before the House of Delegates in June 1943 in the address of President-Elect Paullin and was referred to a reference committee. The reference committee reported as follows:

Your reference committee notes with enthusiasm the formation by the Board of Trustees of the temporary Committee on Planning of Postwar Medical Service, which action it recommends be approved by the House of Delegates.

Your reference committee further recommends that the Board of Trustees be instructed to make this a permanent Committee on Planning of Postwar Medical Service to cooperate and collaborate with other agencies concerned with these problems.

As the organization and scope of the committee progressed, it became evident that liaison members from a number of organizations should be added. The organizations and agencies so included are:

Advisory Board for Medical Specialties
American Dental Association
American Hospital Association
Association of American Medical Colleges
Catholic Hospital Association
Federation of State Medical Boards
War-Time Graduate Medical Meetings
Office of the Surgeon General, U. S. Army
Bureau of Medicine and Surgery, U. S. Navy
U. S. Public Health Service
Veterans Administration
War Manpower Commission
Procurement and Assignment Service
Federal Security Agency

In all, some fourteen meetings of the committee have been held, as often as matters requiring consideration came up, usually at intervals of about two months and when transportation facilities could be arranged. At each meeting representatives of official agencies of the federal government immediately concerned with the prosecution of the war have been present.

Dr. Roger I. Lee, who was responsible for the early meetings of the committee and accomplished its organization, was obliged to resign on account of the press of new duties, and the present chairman was appointed by the committee.

Many questions have been referred to the committee, and a number of these have been made the subject of special reports by subcommittees. The proceedings of the committee have been regularly published in *THE JOURNAL*, as follows:

Sept. 25, 1943, p. 221	Dec. 16, 1944, p. 1036
Oct. 30, 1943, p. 574	Jan. 13, 1945, p. 107
Feb. 12, 1944, p. 447	March 17, 1945, p. 658
March 18, 1944, p. 784	May 12, 1945, p. 138
May 13, 1944, p. 157	June 16, 1945, p. 523
July 8, 1944, p. 726	Aug. 4, 1945, p. 1033
Sept. 23, 1944, p. 243	Nov. 17, 1945, p. 812

At the outset, it was recognized by the committee that any decisions or pronouncements which it might make could be advisory only. However, it is believed that many of the committee's reports and actions have been helpful to physicians in the armed services and also of value to the armed forces themselves in the prosecution of the war and in preparing for the peace to follow. Surprise has sometimes been expressed that the mere reference of a problem to the committee did not at once result in a complete solution. As already noted, by the very nature of its organization the Committee on Postwar Medical Service could be advisory only but could, by collecting all of the information on any one subject, bring the combination of the facts to a focus which would contribute to a sensible solution. While the work of the committee has been of distinct service in many situations, the committee is keenly aware that it has not always been able to effect solutions of problems entirely satisfactory to their proponents. The committee has been guided throughout its work by the principle of service to physicians, both military and civilian, to the prosecution of the war and to the welfare of the civilian population.

The following are some of the problems handled by the committee.

Through the efforts of a subcommittee and the efficient help of Lieut. Col. Harold C. Lueth, liaison officer, pilot questionnaires were sent in the early part of 1944 to 3,000 medical officers

and, when returns had been studied, a revised questionnaire was sent to each medical officer on active duty with the Army, Navy, Public Health Service and Veterans Administration. Reports on the analysis of 21,029 returned questionnaires were published in *THE JOURNAL*: "Results of Pilot Questionnaire to Physicians in Service," June 24, 1944, p. 558; "Future Educational Objectives of Medical Officers," Aug. 19, 1944, p. 1099; "Postgraduate Wishes of Medical Officers," March 31, 1945, p. 759; "The Medical Officer Returns to Civilian Practice," April 21, 1945, p. 127.

One of the most important activities sponsored by the committee is the establishment by the Board of Trustees on authorization of the House of Delegates of a Bureau of Information in the headquarters offices of the American Medical Association. Lieutenant Colonel Lueth aided greatly in the setting up of the Bureau and in defining and organizing the scope of its work. The aims of the Bureau are to provide veteran medical officers with information concerning educational opportunities, state licensure and medical, social, financial, economic and other phases of community life that will enable them to make a selection of a location in which to practice medicine. The Bureau is not meant to be a placement or employment agency. After returning physicians have been given all available information by the Bureau, they are referred to state, county and local medical society committees. Various methods for obtaining and making use of all pertinent data have been devised. The committee is keenly appreciative of the assistance given by state and county societies and by state boards of procurement and assignment. Constantly increasing numbers of returning medical officers are making use of the facilities of the Bureau. An article entitled, "The Bureau of Information, Its Function and Operation," appeared in *THE JOURNAL* for Jan. 6, 1945. An Information Bulletin for Medical Officers was prepared by the Bureau of Information and was distributed very widely in the late summer of this year. Lieut. Col. Robert D. Bickel, who succeeded Lieutenant Colonel Lueth as liaison officer, was extremely helpful in the conduct of the Bureau.

The Subcommittee on Graduate Education of Physician Veterans had a number of conferences with various officials of the Veterans Administration. A report of this subcommittee appeared in *THE JOURNAL* for Nov. 11, 1944.

The matter of the supply of medical and premedical students received the earnest consideration of the committee, and the Subcommittee on Enrolment of Medical Students has held many conferences with officials in Washington and is still working on the problem. A report was published in *THE JOURNAL* for April 7, 1945.

A problem of grave concern to all medical officers in the armed forces arose early in 1945 in that a number of such officers were transferred by presidential directive to service with the Veterans Administration without regard to their own wishes in the matter. The Committee on Postwar Medical Service at its meeting on May 12 adopted a strong statement deprecating this practice, which was forwarded to the appropriate government officials.

The Subcommittee on Surplus Medical and Hospital Supplies has been active, and its reports have appeared in *THE JOURNAL* from time to time as a part of the proceedings of the committee.

The matter of state licensure for physician veterans has been given serious attention at many meetings of the committee. The minutes of the meeting held on Sept. 22, 1945, contain a report on this problem.

The demobilization of medical officers was the subject of study by the Subcommittee on Formulation of Lists of Medical Officers to Be Considered for Demobilization.

Pursuant to the enactment of the so-called G. I. Bill of Rights, a subcommittee was appointed to draw up recommendations to the governors of the states concerning medical education and postgraduate training under the G. I. bill, and subsequently a letter was sent to the governor of each state, territory and the District of Columbia setting forth the committee's ideas and recommendations, with a view to preventing the exploitation of veterans by unqualified and cultist schools. The response

of the various governors was cordial and favorable. A report of the Subcommittee on Graduate Education of Physician Veterans, in which rights of the physician under the G. I. bill are set forth, appeared in *THE JOURNAL* for June 16, 1945, and another in *THE JOURNAL* for August 4.

A report of the Subcommittee on Establishment of a Medical Corps in the Veterans Administration appeared in the proceedings of the committee printed in *THE JOURNAL* for May 12, 1945. Since this report was submitted a program for reorganization of the Veterans Administration has been inaugurated and at the time of writing of this report a new bill (H. R. 4225) has been introduced by Representative Rankin. The Committee on Postwar Medical Service is favorably impressed with many of the provisions of the Rankin Bill.

The Vannevar Bush report advocating the establishment of a National Research Foundation by the federal government has been considered by the committee, which adopted a report of a subcommittee recommending, subject to certain qualifications, that the Bush report receive the support of the Committee on Postwar Medical Service, and that consideration of proposals and of legislation for new federal programs to assist in medical research within restricted areas or specialties of medicine be delayed until the establishment of some such comprehensive program as that proposed in the Bush report covering all fields of medicine and natural sciences. The report of the subcommittee was published in *THE JOURNAL* for Oct. 6, 1945.

The Committee on Postwar Medical Service is much interested in plans for aiding returning medical officers that are being or may be promulgated by local or state medical societies. It also is concerned over what may be done to alleviate the plight of the medical profession and of medical education in the Philippines.

The committee is continuing its consideration of uncompleted problems and will take up new ones as they arise.

Respectfully submitted for the committee.

ARTHUR W. ALLEN, Vice Chairman.

ERNEST E. IRONS, Chairman.

H. H. SHOULDER, Secretary.

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Report of Committee on Rural Medical Service

Dr. F. S. Crockett, Chairman, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

The Committee on Rural Medical Service was created by the Board of Trustees last June following an invitation to confer with a like committee of the American Farm Bureau Federation. The Associated Women of the American Farm Bureau Federation represent some 850,000 farm families, comprising initially the membership of the American Farm Bureau Federation. Its interest in the health problems of farm families and farm communities has been active for some time.

The importance of cooperation with farm groups in health matters, in the opinion of the Board of Trustees, was amply demonstrated by those appointed with me: Dr. C. W. Roberts of the Board of Trustees, Dr. E. J. McCormick, Chairman of the Council on Medical Service and Public Relations; Dr.

Victor Johnson, Secretary of the Council on Medical Education and Hospitals, and Dr. Olin West, Secretary and General Manager of the American Medical Association. Later, Dr. L. W. Larson, secretary of the North Dakota State Medical Association was added for his familiarity with rural conditions in the Northwest. It is hoped to find others with similar special knowledge of other agricultural sections, who can contribute much in finding a solution for existing medical problems.

From 1936 to 1938 the Committee on Legislative Activities met on several occasions with the Associated Women of the Farm Bureau to consider this same subject of rural medical service. As a result of these meetings we have all learned much.

In July this year your committee met with the Rural Health Committee of the Farm Bureau as their guests. The current rural health situation was reviewed. The growing scarcity of physicians in farm communities is producing a situation that creates alarm among those living in these areas. The reluctance of young physicians to seek locations in the smaller communities, at a distance from good hospital facilities, as well as the advancing age of those now so located, was cited as reason for this concern. This is not a local situation but exists in nearly all states of the Union.

The Hill-Burton bill was favored especially in its possible effect on rural practice. It seemed reasonable to believe that the development in rural communities of centers where diagnostic aids together with public health and other kindred activities could be housed, would attract well trained physicians. It seems quite possible that federal legislation of this kind could be instrumental in improving the quality of medical practice in rural America without placing the profession in a legislative strait jacket.

The Farm Bureau is opposed to federal health legislation of a compulsory type and has appeared to testify against such pending legislation in the Senate.

With the one exception of the Farmers Union, all farm groups have adopted a constructive attitude toward and have registered themselves opposed to compulsory socialized medicine. The nature of their work and the semi-isolation of their living develops them as self-confident individualists, impatient with restraint or limitation of their freedom. We as a medical profession have many things in common with them, many areas of agreement, of approval as well as disapproval where federal legislation is proposed. They are our natural allies in the fight to preserve this nation from regimentation, and it is to our mutual advantage that we work in close harmony.

In the July meeting with the Farm Bureau, our discovery of parallel points of view on health problems made it desirable to take full advantage of cooperation at all levels. The American Farm Bureau, like our American Medical Association, is not organized to work on a state or county level. That must be done by state farm bureaus and county farm bureaus. It was agreed that both organizations would invite the component state groups to appoint rural health committees to cooperate in the exploration and solution of local health problems.

In furtherance of this plan, your committee has written all state associations asking appointment of rural health committees. To date, committees have been appointed and reported to us by twenty-five states. These committees have been created in response to an appeal for help from the Farm Bureau, and the Grange with all interested farm and community groups should enter this activity. The need is very urgent and calls for action now.

While it is recognized that every one in the community must contribute his full share in any plan, we, as the medical profession, are expected to supply many of the answers in the solution of this problem. It might appear that the supplying of well qualified physicians and adequate hospital facilities would be sufficient, but this would not be a complete answer. As consonant with and in development of point number one of the fourteen point program for medical care, as applied to rural America, we also need the building of suitable habitations providing protection from cold and moisture and with proper plumbing, as many rural houses are not fit to live in; clothing

appropriate for the protection of the individual; balanced diets suitable for the promotion of healthy growth in the young and maintenance of vigorous bodies in the mature, and a knowledge of better living habits, including instruction for expectant mothers, infant care and the home management of common ailments and first aid. All these add up to the need of widespread health education and appreciation which is the duty of the individual to learn if the presence of a physician in the community is to have full effect.

As the individual has his evident duties in this plan, so has the community through provision of qualified public health administration.

The value of all the foregoing may be included under the general term of health education. If the citizens have it, all is well; but if they do not have it or will not learn it the presence of the best trained physician is only partly effective.

Prepayment plans for medical care and for hospitalization have the approval of many farm groups; however, some of them feel that such plans should be consumer operated. Such plans should be made available to farm groups as early as experience permits.

The place of the marginal farmer in prepayment plans has been given much thought and discussion. He is presented as above the indigent but below the level of those able to join a prepay group.

He should be classed as medically indigent and cared for by taxation, but this term gives offense and must not be used, which all makes the situation very difficult.

This marginal farmer needs help, he wants help but he cannot pay for it. He refuses what he considers charity at the hands of the taxpayer but complains of hardship and inequity when he fails to receive care. It is difficult to know how this has been met in the past, but evidently some doctor has given the service, a kind of charity that has no sting to it for the recipient. The \$30 to \$50 premium may be too much for those with an annual income under \$1,000, though it would be interesting to know what is purchased with what they earn. It is possible that some plan for supplementing part payments with tax money could be devised.

A number of states, notably North Dakota, Virginia and Georgia, have sought through surveys of rural health needs to meet the long recognized problem of increasing shortage of professional personnel.

In Virginia a committee has been working on this subject since 1941. "They have advocated twenty set scholarships per year, in the two state supported medical schools to individuals who practice for a period of four years in rural areas." Pointing to the advantages of so-called health centers, the legislature is urged to appropriate \$360,000 to establish six such centers in communities for experimental purposes. (Letter from Dr. Mulholland.)

In North Dakota an extensive survey of medical, dental, hospital, ambulance, x-ray and public health facilities revealed a shortage of physicians in many rural areas. Three counties have no physicians and in many other parts a corresponding lack of hospital and public health facilities. The Farmers Union is sponsoring development of a cooperative health center which will employ physicians on a full time basis and members will receive complete medical and hospital coverage. Considerable experience may be gained from this and other efforts promoted by consumers of medical service. (Report of Dr. Larson.)

Georgia has published a "Public Health Program" for the state, prepared by the Health Panel of the Agricultural and Industrial Development Board. This is a most extensive and complete survey covering the period 1940-1944. It would seem to supply the information on which an immediate and long term plan can be based. This covers urban as well as rural needs. Since Georgia suffers from too few doctors not equitably distributed, the report sought to discover the reason. They concluded "First and most important is the lack of hospital, x-ray equipment and laboratories within easy distance of rural communities." Five types of service are proposed: health centers, shelter health centers, general hospitals, medical centers and tuberculosis hospitals. Health centers would house medical,

dental and public health personnel and be equipped with a small laboratory and fluoroscope, and shelter health centers, a larger unit located in county seats equipped as health centers and with the addition of an emergency and obstetric bed capacity equal to 1 or 1.5 beds per thousand, which, in addition to general hospitals strategically located, would give the doctor in rural areas the diagnostic aids he might have in more favored areas.

It is patently impossible to expect all communities to view their health needs with equal earnestness and foresight. It was recognized by the Farm Bureau as peculiarly their duty to educate their public in the desirability of health information and cooperation in health programs.

It would seem to be our privilege to set up the minimum elements within the framework of satisfactory rural practice. It is recognized that the social environment is an important factor, as is the opportunity to earn a satisfactory income. Assuming that these conditions are met, the rural practitioner should have available the diagnostic facilities and opportunity for consultation enjoyed by those near well equipped hospitals.

The construction by the people of a building wherein may be housed a clinical laboratory, x-ray, the full time public health office with adequate nursing staff, public health supervision, immunization, communicable disease control, control of food handlers, eating places, tourist and vacation camps, sewage disposal and other public health activities and where doctors' offices and dental offices might be housed would go far in placing the practice of medicine in rural communities on a satisfactory level.

This brief report of activity in a few states, pointing to the urgent need for some solution and sketching in general the outline of the conditions that should exist in rural areas for satisfactory professional activities, calls for a corresponding analysis of the plans, the hopes and the desires of the returning medical veteran. This is known only in part. Mention should be made of the valuable work of the Bureau of Information of the American Medical Association. Through cooperation with state societies, complete current information is compiled covering areas needing doctors. This covers "data relating to medical facilities, medical personnel and medical needs and other information concerning medical care within each state, together with the physical and economic aspects of any community in question." This information is made available to inquiring medical officers returning from service. The report cites since V-J day over 2,000 such inquiries. It is interesting to learn that a number prefer country to city locations. Unfortunately, the completeness of this record is hampered by failure of some state associations to cooperate. The integration of this information with the committees of the Farm Bureau and other rural groups should go far in placing doctors. The placing of physicians, however, cannot be considered as completing the job. Some way must be found to establish the facilities needed to keep them there.

In a recent letter Dr. Charles R. Bird, chairman, Procurement and Assignment Service for Indiana, states what may be true generally, that "of the 300 Indiana doctors released, comparatively few ease the situation in stringent areas. . . . Almost universally they inquire about towns of 20,000 to 50,000 population . . . and always demand a town with ample hospital and laboratory facilities. . . . Many of our small communities formerly with one, two or three doctors, now have none or, perhaps, one beyond the age of efficiency."

President Truman, in his recent message to Congress, stressed the inequity of distribution of doctors and of hospital and other health facilities to the great disadvantage of rural areas. He stressed, however, that those served must be able to pay for the service. Since there are places unable to meet this ability test, he proposed to create a pool of tax money on a national scale to assure the creation and maintenance of adequate facilities and supply the financial resources to give the professional personnel pay comparable to that to be had in other places. As he pointed out, these returning veterans cannot be assigned, they must be attracted to the places needing them. Under any plan proposed, several years will be required to build and equip the facilities now being contemplated.

It seems strange that this laudable purpose cannot be accomplished in some simple manner. The need exists now, not five years hence. The solution will not be easily found. It is hoped through a multitude of conferences within the several states, between the profession and farm groups, ways can be found to provide adequate medical care—some way free of the legal shackles which seem to distinguish most proposed legislative solutions.

Respectfully submitted,

F. S. CROCKETT, Chairman.
CHARLES W. ROBERTS.
E. J. MCCORMICK.
VICTOR JOHNSON.
L. W. LARSON.
OLIN WEST.

NEW BUSINESS

Resolution on Christmas Seal Drive of National Tuberculosis Association

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The National Tuberculosis Association has altered its policy and will not permit Christmas Seal funds to finance charitable cases in sanatoriums, a necessary practical relief measure to prevent contagion; and

WHEREAS, Under this new policy the National Tuberculosis Association insists that city and county welfare agencies place and treat all indigent patients, thus placing a greater load on taxpayers and often allowing infected persons to spread the disease because crowded welfare hospitals are unable to treat all patients; and

WHEREAS, This same policy also will not allow Christmas Seal Funds to finance children's camps, a time proved preventive measure to care for children of parents infected with active tuberculosis; and

WHEREAS, The National Tuberculosis Association places educational campaign work in importance over actual care and treatment of tuberculous persons; and

WHEREAS, This educational work, so called, consists in the distribution of literature and propaganda by lay paid social workers and promoters and other nonmedical work; and

WHEREAS, The National Tuberculosis Association exacts percentages ranging from a known 15 to 50 per cent from local community seal drives for nonmedical expenditures such as the aforementioned strictly propaganda campaigns and not for the isolation and actual prevention of tuberculosis; be it

Resolved, That the Board of Trustees of the American Medical Association confer with officers and trustees of the National Tuberculosis Association to determine why the aforementioned policies have been adopted and promulgated in the face of proved medical practice and determine further if the American Medical Association shall continue to support in letter and in spirit the Christmas Seal drive of the National Tuberculosis Association.

Resolutions on Future Medical Care of Veterans

Dr. James C. Sargent, Wisconsin, presented the following resolutions, which were referred to the Reference Committee on Medical Care of Veterans:

WHEREAS, The record of a quarter century of government controlled medical care under the Veterans Administration serves as a shining example of the great difficulties inherent in any program of bureaucratic planning for the care of sick peoples; and

WHEREAS, The strong upswing in government inspired social planning, combined with the patriotic urge of all citizens to do well by those who sacrificed so much in the service of our country, presages a great wave of public and political sentiment toward the giving of free medical care to all ex-servicemen, their wives and families; and

WHEREAS, Activation of tens of thousands of reserve medical officers and the construction of large numbers of temporary army and navy hospitals under the recent war emergency has left a plethora of hastily assembled government medical facilities throughout the country ripe for exploitation by those who, through ignorance or design, would foist socialized medicine on a great block of American citizens by transfer of these facilities from their intended emergency war purposes to a permanent peacetime program of free sickness care for veterans and their families; and

WHEREAS, Any such sudden expansion of government controlled sickness care in America, however well it may be draped with the flag of patriotism, would still be nothing more nor less than one gigantic stride toward the ultimate complete socialization of all medical care in America; and

WHEREAS, The development of any such expansive program of sickness care for veterans and their dependents would cast a withering light on American medicine that would be tragic for all, including the very veterans it proposed to help; be it therefore

Resolved, That this Association do everything in its power to urge and support the government in providing the best possible medical care for any veteran left disabled, through injury or disease occurring in, this or any other war; but be it further

Resolved, That it reaffirm its long established opposition to any attempt at the socialization of medicine in America by extending medical benefits under the Veterans Administration to encompass disabilities that obviously are not service connected or to the general medical care of the dependents of veterans.

Resolutions on Licensure of Honorably Discharged Medical Officers Without Examination

Dr. James C. Sargent, Wisconsin, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, A large number of recent medical school graduates have been called to active duty in the armed forces without opportunity to submit to examination for license to practice medicine in the states in which they are to locate; and

WHEREAS, Other older physicians, after abandoning their established homes and practices to serve their country, now find it necessary or desirable to relocate in some states other than the ones in which they had been practicing; and

WHEREAS, An obvious injustice will be done if physicians, as they approach the end of their long years of patriotic sacrifice, are required to hold all personal plans in abeyance until opportunity for examination presents and in the end submit to the risk of a highly technical examination the result of which is beyond appeal; be it

Resolved, That this Association hereby record its belief that any physician who has graduated at an approved medical school with the degree of Doctor of Medicine and who has served honorably as a medical officer in the United States Army, Navy or Public Health Service during the recent war has, by the requirements of his commission and his good record of service, furnished proof above any reasonable question that he is ethically and professionally qualified for license in any state or federal district in the Union; and be it further

Resolved, That a proper memorial to this effect be forwarded to the governor and to the board of medical examiners of each state urging each to license, without examination, any applicant who has been granted the degree of Doctor of Medicine by an approved medical school in the United States and who has served honorably in the United States Army, Navy or Public Health Service.

Resolutions on Creation of Committee on Medical Preparedness

Dr. James C. Sargent, Wisconsin, presented the following resolutions, which were referred to the Reference Committee on Postwar Planning:

WHEREAS, In times of war the enormously expanding armed forces of our country always find it necessary to draw on the medical profession for a great number of volunteers from among the physicians in private practice; and

WHEREAS, Recent wars have caught the country and the profession without a well developed plan for the procurement of this large number of volunteer medical officers; and

WHEREAS, This lack of careful advance planning has led to a disruption of civilian medical care to the point, even, of the risk of great national disaster in the event of large civilian casualties of widespread epidemic; and

WHEREAS, The system of peacetime enlistment of reserve medical officers augmented in wartime by Procurement and Assignment under the War Manpower Commission, while succeeding nobly in its primary purpose, failed notably in accomplishing fair and even spread of military duty throughout the profession as a whole; and

WHEREAS, The evident lack of full use of the professional talents of many medical officers in the services raises serious question regarding the true number of physicians actually needed by the military services in time of war; and

WHEREAS, A heavy dual responsibility rests on the medical profession to inspire and lend its informed opinion to the development of a program that will insure, in the event of future war, a prompt and proper supply of physicians to the armed forces and, at the same time, insure adequate civilian medical care at home; and

WHEREAS, The American Medical Association in exercising, as agent for the profession, its powerful control over the lives and fortunes of the individual doctors of America is, by that very token, charged with the great responsibility of doing all in its power to see that physicians will not be pressured into the armed services in time of war beyond the numbers actually needed, that those who volunteer will be utilized for their medical talents only and that they will be required to serve for a reasonable and well defined period at the end of which they may be released to civilian life and replaced by others from among their colleagues; be it for these several closely related reasons

Resolved, That in the interest of the general public health of our country this Association undertake a thorough study of the proper apportionment of physicians to military and civilian needs in time of war; and be it further

Resolved, That in the common interest of all within the profession this Association undertake a review of past experiences in the procure-

ment and assignment of practicing physicians to the armed forces in an effort to devise some workable program whereby the privilege and responsibility of military duty in future wars may be divided more evenly throughout the profession; and be it further

Resolved That in the interest of preserving the professional talents of those physicians serving in the armed forces in time of war this Association undertake a critical study of the duties of medical officers during the war just past with special reference to (1) opportunities for study, research and actual treatment of the sick, (2) rotation of medical assignments, (3) quasimedical duties for which technicians and specially trained enlisted personnel might replace physicians, (4) nonmedical duties for which the special talents of physicians are not required and (5) periods of total inactivity as pooled personnel, in unit training areas, in staging areas, awaiting repatriation; and be it finally

Resolved, That, to implement these closely related studies, the Board of Trustees be and hereby is requested to allot necessary funds and appoint a special Medical Preparedness Committee to study, by means of questionnaires sent to medical officers on release from active duty, by conferences with proper military authorities and by other means the problem as herewith outlined, said committee to report its progress at each future meeting of this House of Delegates until such time as its final report, together with recommendations that it may find indicated, has been submitted and the committee discharged

Resolution on Activities of Employees of American Medical Association

Dr. S. J. McClendon, California, presented the following resolution, which was referred to the Reference Committee on Executive Session:

WHEREAS At this time many important problems confront the medical profession; and

WHEREAS, The American Medical Association is in need of the most efficient organization possible in the solution of its problems; and

WHEREAS, Employees who participate in activities outside of the Association cannot render their best service to the Association, therefore, be it

Resolved, That all employees of the Association who are not specifically employed on a part time basis shall be required to devote their full time to the activities of the Association for which they are employed and shall not engage in outside activities from which they derive financial income

Resolutions on Proposed International Congress on Tropical Medicine

Dr. Thomas K. Lewis, New Jersey, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The exigencies of recent years have intensified research on problems in the field of tropical medicine, resulting in numerous and significant discoveries which materially contributed to the success of our military operations in foreign theaters; and

WHEREAS, Since the general interest in tropical medicine is more widespread than at any time in the past and the medical profession is keenly aware of these problems which become more pressing because of the phenomenal growth of international air travel; and

WHEREAS, It is important that information on these discoveries be brought to the world in order that with the return of peace the benefits of this knowledge may be available to promote the well being of the people of the world; and

WHEREAS An international reunion of those who have contributed to these advances with others who may be qualified to disseminate their benefits is the most effective measure to diffuse generally this knowledge and since such an international gathering of scientists will materially contribute to the better international understanding and cooperation so essential to an enduring peace; be it

Resolved That the American Medical Association heartily endorse the proposal of the American Academy of Tropical Medicine that an International Congress on Tropical Medicine and Malaria be held in the United States at an early date and that the American Medical Association join with the American Academy of Tropical Medicine in petitioning the State Department of the United States government officially to sponsor and invite international participation in such a gathering at as early a date as is regarded opportune and direct the secretary of the American Medical Association to advise formally the State Department of this endorsement; and be it further

Resolved, That the Board of Trustees of the American Medical Association be authorized and empowered to appoint a member of the American Medical Association to represent the American Medical Association on a committee composed of duly authorized and appointed representatives of the American Academy of Tropical Medicine, American Society of Tropical Medicine, National Malaria Society, American Society of Parasitologists, Southern Medical Association, American College of Physicians, American Association for the Advancement of Science and the Section on Medical Science of the National Research Council to meet on call from the president of the American Academy of Tropical Medicine for organization and in their organized capacity to assist the State Department in developing, promoting and holding such a congress, and the American Medical Association will give all practicable support to the realization of this project.

Principles Dealing with Medical Care for Veterans Adopted by Medical Society of New Jersey

Dr. Thomas K. Lewis, New Jersey, presented the following statement including a copy of the Monmouth County Plan for Veterans' Medical Service, which was referred to the Reference Committee on Medical Care of Veterans:

The Medical Society of New Jersey is of the opinion that organized medicine should concern itself actively with and should assume a large measure of responsibility for the medical care of the returned wounded and physically unfit veterans of our armed forces. It is of the opinion that detailed plans for such care should be established at a community level.

Based on a study of the Monmouth County plan, which has been established and approved through direct contact with General Hawley, the Medical Society of New Jersey has adopted a set of principles sufficiently broad in scope to provide the framework for the adequate care of veterans in any community.

The Medical Society of New Jersey submits the following principles in the hope that they may be helpful in the production of a formula by the House of Delegates of the American Medical Association to serve as a foundation for county or community organization on a national basis: 1. That there shall be established by each county medical society a liaison committee to serve in close cooperation with the local or regional representative of the Veterans Administration with the following duties: (a) to provide screening or diagnostic teams or clinics in well equipped general hospitals or other suitable locations for the purpose of establishing the medical needs of the veteran and directing him to that physician or institution where he may be most adequately treated, (b) to utilize to the fullest extent the mechanics of the private practice of medicine, (c) to establish fees for service rendered at average reasonable rates existent in the particular community, (d) to utilize in those cases requiring hospitalization the approved general hospitals and specialty hospitals in the immediate locality, except where state, county or Veterans Administration hospitals are indicated as most suitable for the particular condition involved, (e) to obtain, through close cooperation with the local representative of the Veterans Administration, the greatest possible simplicity of forms for obtaining authorization for rendering reports and bills and (f) to serve as an appeal board to determine adequacy of medical service and to be endowed with disciplinary power over physicians for the purpose of protecting the interests of the veteran and the Veterans Administration; 2. that existing general hospitals be used to the fullest possible extent in each community with enlargement where necessary by federal grants, as the indiscriminate erection of new institutions by the Veterans Administration or the federal government would be wasteful and in most cases would remove the veteran far from his home, and it is our studied opinion that new institutions should be erected only where need for special types of cases might require long and continued hospitalization or for large groups requiring unique or unusual type of medical care and the need for such institutions should be clearly demonstrated before establishment; 3. that the eligibility of a veteran for care at government expense should be limited to veterans who (a) have service connected disability or (b) who are in need economically.

It is maintained that any veteran not suffering from service connected disability and not in acute economic want should obtain his medical care in the same manner as any self-sustaining citizen.

THE MONMOUTH COUNTY PLAN FOR VETERANS' MEDICAL SERVICE

The purposes of the Monmouth County plan are to provide individual doctor-patient relationship, a free choice of physician as far as is compatible with good medical practice, the elimination of the psychologically bad situation of treatment by a "government doctor" in whose selection the patient has had no part and the avoidance of the necessity of traveling long distances to a veterans' facility by providing medical and hospital care within a reasonable distance of the veteran's home.

The plan, as authorized by Major Gen. Paul R. Hawley, Acting Surgeon General of the Veterans Administration, is as follows:

1. All members of the Monmouth County Medical Society and of other county medical societies in New Jersey who are designated by the Monmouth County Medical Society will, with their consent, be designated as part time physicians of the Veterans Administration.

2. The Monmouth County Medical Society will establish in such hospitals as it may determine triage or sorting clinics. Such clinics will be open for the examination of veteran patients at such times as the need indicates, probably once each week or more often. Each such clinic will be staffed by such specialists as are indicated after a trial. The function of these clinics is (a) to determine by examination whether or not the veteran needs treatment, (b) to determine what such treatment should be and where it should be given and (c) in cases in which treatment is authorized by the Veterans Administration to refer the patient to the proper physician or hospital for such treatment.

3. The Monmouth County Medical Society will form a disciplinary or reference committee to see that the patient receives the treatment indicated by the designated physician and to pass on complaints from all sources.

4. The Monmouth County Medical Society will operate this program for a trial period not to exceed three months without pay, except that physicians giving treatment authorized by the Veterans Administration will be paid fees. The Monmouth County Medical Society will submit to the Veterans Administration a schedule of fees which its members believe to be reasonable and just, and the Veterans Administration, after consultation with the society, if necessary, will determine the schedule of fees to be paid. Except for the payment of authorized service to patients, the Veterans Administration will not be obligated financially during this trial period.

5. The Veterans Administration will provide the proper liaison and facilities for making prompt decisions as to service connection in each of the clinics.

It is also anticipated that the foregoing program will be correlated with the Veterans Administration plans to use local hospital facilities, both general and specialized. The veteran hospitalized in a general hospital would be treated by a designated physician who is also a member of the staff of that hospital. Other arrangements will have to be made regarding specialized hospitals, such as nervous and mental, having full time closed staffs.

It should be noted that in the foregoing plan every effort is being made to utilize the services of ex-veteran physicians, both as designated physicians and as members of the clinic staff. The proposal to have the clinic staff made up of specialists follows the previous practice of the Veterans Administration, and it is felt to be the quickest and most efficient way of arriving at exact diagnosis. Treatment will be put in the hands of the general practitioner whenever possible.

Resolutions on Permanent Conference on Medical Care

Dr. Thomas K. Lewis, New Jersey, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, It has long been the objective of organized medicine in America that satisfactory distribution of the best possible quality and quantity of medical care shall be available, physically and economically, to all the people of the United States and in all parts of the United States; and

WHEREAS, The government of the United States is now officially committed to the attainment of the same objective; and

WHEREAS, The realization of such an objective can be most effectively accomplished through wholehearted participation by the medical profession and through the satisfactory integration of any plan with the mechanics of the practice of medicine as developed in this country through the experience of one hundred and seventy years incidental to the evolution of the American way of life; therefore be it

Resolved, That this House of Delegates instigate the formation of a Permanent Conference on Medical Care to be created immediately either by (1) the American Medical Association, (2) the Congress of the United States or (3) the President of the United States, to be composed of an equal number of official representatives of (1) the American

Medical Association and (2) the governmental agencies concerned with health services and that the members of such conference be given equal powers of action to the end that the American people may be provided in our time with the best possible quality, quantity, availability and distribution of medical care by concerted American democratic action with resultant peaceful solution of the medical care problems which concern us all, and further be it

Resolved, That the representatives of the American Medical Association to this conference be appointed by the Speaker of this House of Delegates

Resolution on Recognition of Physicians Who Served on Procurement and Assignment Service in Various States

Dr. William D. Stovall, Wisconsin, presented the following resolution, which was referred to the Reference Committee on Postwar Planning:

WHEREAS, The need of the military for physicians during the war period was acute and required large numbers of them; and

WHEREAS, The selection of these physicians was delegated to the Procurement and Assignment Service in the various states; and

WHEREAS, This service rendered loyal, energetic and effective effort in the selection of those men who were to be made available to the military service at the least possible hazard to the civil population; therefore be it

Resolved, That the House of Delegates authorize the recognition of this devoted and unselfish service by awarding an appropriate symbol to the medical personnel of the Procurement and Assignment Service of the nation and the various states which will be an expression of the appreciation of the medical profession of the nation

Resolution on Early Return of Physicians and Medical Students Now in Military Service

Dr. William D. Stovall, Wisconsin, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, It is acknowledged that our national medical resources have been such as to provide the armed forces with the finest medical service available in the world; and

WHEREAS, Despite the efforts to utilize the supply of medical personnel to the best advantage there existed to a considerable extent ineffective distribution and poor utilization of medical personnel within the armed services; and

WHEREAS, The medical resources of the country are impoverished for civilian usage and this condition has been accentuated with full effects only to be felt in the future by the refusal of Selective Service to defer prospective medical students; and

WHEREAS, There exists under the control of military officials a large pool of medical students and prospective medical students who, in the interest of the health of the nation, should be released to the pursuit of their chosen profession; now therefore be it

Resolved, That the State Medical Society of Wisconsin, through its House of Delegates in annual session in Milwaukee in October 1945, urges its officers and official representatives to initiate or support such programs as may be desirable to assure not only the early return of medical veterans to civilian practice but the return of medical school students and prospective medical school students to additional training

Resolutions on Appointment of Committee for the Study of Nursing Problems and Education

Dr. William D. Stovall, Wisconsin, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, The medical profession of Wisconsin has over a period of several years interested itself vitally in the problem of nursing education and classification and functional utility and believes there is a definite need of reevaluation and alignment with contemporary economic, social and public health need; and

WHEREAS, There is formulating a movement on the part of nursing educators and leaders to restudy the problem of nursing education and functional level of practice in the light of prewar, war experience, social need and public health expediency; and

WHEREAS, The problem is so definitely one of multiple jurisdictional interest and responsibility in which the medical profession as well as hospital management have a major part and obligation to the public to use the weight of their experience and authority in assisting to bring about the most perfect program possible in the nursing field; and

WHEREAS, It is necessary in the interest of reciprocal arrangements for interstate movement and practice of nurses to reach the national level of influence; therefore be it

Resolved, That the American Medical Association emphasize the need for the constituent state associations to interest themselves in this problem and to bring about a truly national picture and analysis of the problem; and be it further

Resolved, That a committee for the study of nursing problems and education to act as a unit of a joint committee composed of hospital and nursing personnel, each to be appointed by their respective national organizations, be appointed by the President of the American Medical Association and that the American Medical Association request these respective national organizations to appoint similar committees

Introduction of Major General Paul R. Hawley

The Speaker announced the presence of an honored guest, Major General Paul R. Hawley, and requested Dr. Fred W. Rankin, Past President, to escort him to the platform.

Address by Major General Paul R. Hawley

The Speaker introduced Major Gen. Paul R. Hawley, acting surgeon general of the Veterans Administration, who addressed the House as follows:

Mr. Speaker and Officers of the American Medical Association, Members of the House of Delegates: I consider it a high privilege to be permitted to appear before you. You are the representatives of the best in American medicine. I want to report to you as one medical man to another what we propose to do in the medical care of the veterans. There have been several things said here today that I should like briefly to comment on before I plunge into my subject.

I know of no better place than this to pay the greatest possible tribute I can to the sixteen thousand American doctors who served our forces in the European Theater of Operations. The great majority of these—and certainly all of those in the key positions—were members of this Association. I was impressed this morning by a statement made from this platform—mention of the great work done by American medical colleges in the past twenty-five years. I heartily endorse this statement. I have been asked frequently what was the greatest advance in medicine between World War I and World War II which had accounted for the great reduction in the case fatality rate among the wounded in World War II.

I was expected to say plasma or whole blood, sulfonamides, penicillin. I know that these certainly played a great part; but, from very close association with the wounded, I am quite sure in my own mind that the greatest advance between the two world wars was the better education of doctors. There is no substitute for a good doctor.

I should like also briefly to comment on a resolution which was offered here on the inclusion of osteopaths in H. R. 4717. I objected strenuously before the subcommittee rewriting this bill when that proposal was made; and General Bradley, in his official report on the bill, also objected to that provision.

Now I come this afternoon to present for your consideration the greatest single problem that has ever faced American medicine, and perhaps one of the greatest problems ever in the history of medicine. This is to give a very high standard of medical care to approximately twenty million men.

The medical care of the veteran was attempted, after the last war, largely by a full time corps of doctors. There were only four million veterans at that time, and I think that, no matter what misstatements may have been made of the medical service of the Veterans Administration, it is at least a safe statement to say that that standard of medical care was never quite high enough to satisfy the medical profession, the veteran or the people of the country.

I think we should inquire into the reasons why it was not a complete success. One reason was that this full time corps was organized hurriedly. There was no nucleus around which to organize, and doctors were procured often without too much attention to their qualifications. The Army, I know in my experience, obtained a great many new doctors after the last war; and, with an old organization behind them, with every facility for making determinations of qualifications, there were mistakes made. So it is not surprising that mistakes were made by the Veterans Administration.

Then, when this corps was organized, the medical service was submerged under lay administrators—both in the central office in Washington and in the field. These administrators not only knew nothing of medicine but too frequently were not very much interested in the problems of medicine. Then, in the procurement of new doctors, the Civil Service dictated the selection. They also prevented the removal of the poor material that did get in.

The doctors in the Veterans Administration were isolated from the rest of the profession and from the advances in medicine.

This Association, for sound reasons of its own, made it almost impossible for a doctor in the Veterans Administration to become a member, and they began to feel that they were outcasts and pariahs in the profession. I have been repeatedly urged to petition you—and a resolution from another source has been placed before you today—to grant membership in the American Medical Association to the doctors in the Veterans Administration. I should like very much to see this done; but I shall not ask you for this until the medical service of the Veterans Administration is reorganized, as it is wisely stated in the resolution, and meets the standard which you want it to meet. I feel quite confident that, when I come before you at that time, you will generously extend the privileges of this Association to the doctors in the Veterans Administration.

It has been charged that, on the whole, the doctors in the Veterans Administration were discouraged and merely drifting along; that they went to work at 8:30 in the morning and quit at 4:30 in the afternoon; that they were holding jobs rather than practicing medicine. I think it is true that there have been, and perhaps still are, some of that type in the Veterans Administration, because it is from that type that I am now getting the most opposition to the reorganization of this medical service. But, gentlemen, I would be very unfair to many fine doctors in the Veterans Administration if I did not assure you that one of the most encouraging things that I have found since coming to the Veterans Administration is that there are some very high class doctors in the Veterans Administration—doctors who have refused to give way to discouragement, refused to admit defeat in a defeated organization. A goodly number of these doctors have qualified themselves by their own efforts, working at night and without any encouragement from above, to qualify for their boards. And what a struggle they must have had!

We have some fine hospitals. We have some fine clinics. Only recently a surgical clinic was held in one of our hospitals. I was unable to attend and I sent Elliott Cutler and Glenn Spurling, both of whom are known to you. They both were enthusiastic about what they saw. Cutler wrote to me "I would have been proud to have had that clinic given on my service at the Brigham." So there are good doctors in the Veterans Administration. The only trouble is there aren't enough of them. We have got to get more.

If we failed to take care of only four million veterans satisfactorily with a full time corps, it seems to me that it would be folly even to approach the problem of attempting to take care of twenty million veterans with a full time corps. However, we must have some full time doctors in the Veterans Administration. There must be continuity in our hospitals that can never be had with part time people. There are other positions requiring some administrative as well as medical background that can be filled only by full time physicians. So we must have some full time physicians, but we can't in any way solve the problem with such a corps. The problem can be solved only by the organized medical profession of this country, and I repeat the word "organized." That is the profession, the organization, that you represent.

The only question is, How shall it be solved? Well, at present we have about 72,000 beds in operation in veterans' hospitals with 11,000 emergency beds, so called, crowded into the halls, totaling about 83,000. To operate these beds and fill the medical positions in the regional office we need about 3,600 doctors at the moment, and the need is increasing every day. We have 2,300, so we are short 33 per cent of the doctors that we now need full time. Of these 2,300, 1,700 are in uniform. A great many of those in uniform are doctors who were formerly with the Veterans Administration and who might be expected, if they were invited, to stay with the Veterans Administration after they have been separated from the service. But a recent canvass of all those 1,700, regardless of where they came from or what they were doing before the war, showed that only 35 per cent would elect to stay with the Veterans Administration after the war.

Now that means that unless we get new blood and get it fast, by the spring of 1946 we are going to have only one third as many doctors as we require at the present time to carry our load, and our load is increasing daily. So obviously we have

got to have help in the medical care of the veteran from the organized profession of this country. That situation is very plain to me; yet in face of this plain situation there is heavy pressure from several sources to force us to take over every existing army and navy hospital built during the war and to try to operate them—I say “try to operate them”—for the veterans. Most of these hospitals were built in isolated places, having been located the same way in which some effort is now being made to locate new veterans’ hospitals—by political expediency. Such are usually out in the country where it is impossible to get any part time help to staff them.

You may ask me now that, since we can’t staff the hospitals that we already have, why do we even think about building more hospitals? Well, we have got to have more beds if we carry out the program of the Congress for the veteran. We would use beds in existing hospitals if we could get them; but there are few places in this country where there are any beds available, and no one knows that better than this group right here. We make every effort to put beds under contract wherever we can get them, but we are not very successful. On the other hand, as you know, as the law now stands we are not permitted to pay for beds in hospitals for non-service connected cases, and the policy has been announced both by the President and by the Congress that we shall provide some beds for non-service connected cases.

So, if we are building new beds now, how do we propose to staff them? If you will see where the great majority of these new beds are being located, you will understand that we propose to staff them almost exclusively by physicians in the private practice of medicine. To solve this particular problem of associating our hospitals with the schools of medicine and with other hospitals of the country—not only the schools of medicine, because we are also going into towns that have a fine medical profession without having a medical school—I have been most fortunate in obtaining the services of Dr. Paul B. Magnuson. He has given up his practice and has come full time because he sees, in this great need, an opportunity not only to serve the veteran but also to serve the medical profession. He has asked to advise him Dr. Bennett of Baltimore and Drs. Pepper and Rodman of Philadelphia, and Dr. Darrach of New York—men that he could easily get to, that lived close to Washington. I offer to you the names of these gentlemen as a guaranty that what we propose to do in the care of the veteran will not only be in the great interest of the veteran but also will be in the interest of the profession. Not one man that I have mentioned here but has your greatest confidence.

We hope to get younger physicians returning from the service, qualified men who have passed their boards, men who have come back without financial resources with which to start practice, having spent most of their money before going into the Army in getting their qualifications. They are coming back now, having to start in practice without much to start with. We think we can help this group of fine young specialists by having them take over services part time in such of our hospitals as are located convenient to medical centers. I need only to say that from such men there will be found attending staffs in every sense of the word, with full responsibility for the patients, and you gentlemen know what an attending staff is and what is required of it. Then we shall provide residencies in these hospitals—also for returning servicemen whose education has been interrupted or who have not even started their qualifications for a board. We have that system now in operation in one hospital. It is being started in another, and a third has been surveyed. This program will be extended as rapidly as it is humanly possible to get around to our hospitals. There has been objection in certain quarters from a misconception of our proposals. It is a curious thing that there has been opposition for many years, from certain groups, to teaching in veterans’ hospitals. These people hold the curious idea that, when you teach in a hospital, patients necessarily are guinea pigs. Obviously, a veteran is never going to be a guinea pig. The veteran is a private patient. The only difference between the veteran and the wealthiest patient in the best hospital in this country is that the government is paying the veteran’s bill.

So much for the hospitalization of the veteran. An even larger problem is his outpatient care and treatment. Here we run into a legal obstacle which causes considerable administrative difficulty. This is that the veteran is entitled to outpatient treatment at government expense only for a service connected disability; and so the service connection of his disability must first be established before the treatment can be authorized by the Veterans Administration.

Now, after World War I this sort of thing was attempted by contracts with individual physicians throughout the country. Too many of these designated physicians were political appointees. Busy physicians usually shied away from these appointments. While the great majority of the designated physicians were scrupulously honest, there were scandals. There was collusion with patients, and fees sometimes were split with patients for unnecessary treatment. We cannot now afford, as a Veterans Administration or as a profession of medicine, to have any scandal in our outpatient treatment of the veteran. We want no small group of designated physicians for veterans. We want every veteran to have the free choice of his physician; and how can he have it? He can have a free choice only if every qualified and ethical physician accepts appointment by the Veterans Administration.

The Veterans Administration can’t deal, obviously, with 125,000 individual physicians in this country. That would be a physical impossibility. We must deal with organizations of physicians. Now, how shall we deal with organized medicine? On our terms or on the terms of organized medicine? Well, it seems to me, since organized medicine is going to have to do most of this work, that we in turn shall have to deal with you largely on your own terms. I hasten to say that we have already found organized medicine most fair and reasonable in the scales of fees which have been submitted to us. The profession has shown every intention of doing its full part in the solution of this problem. We rather think that no nationwide plan can succeed because the situation in the medical profession and the distribution of veterans vary widely in different parts of the country.

On the other hand, we rather shudder to think of having to deal with the three thousand county medical societies in this country. We have two plans under way now with state organizations, and these promise to be very successful even though one of the states is highly urban in certain parts and highly rural in others. We thought that perhaps this would be a factor we would have to consider in every state—the difference between the rural and urban sections of the state—but we are assured by both of these state organizations that this isn’t important, and that they can have one single scale of fees throughout the state.

Our only stipulations in any plan are that the veteran receive adequate treatment—as much as he needs and no more than he needs—and that organized medicine itself set up the necessary control of this medical service—the policing of it, if you will—to insure that the veteran gets such care and that neither the veteran, the doctor or the government is in any way defrauded. We have just started to organize this outpatient service. First came to us those public spirited physicians in Monmouth County, N. J. They first came last May with a plan that was rejected for reasons that we have never discovered. As soon as we heard of that plan we telephoned the Monmouth County Society and asked if they were still interested. They were interested and their plan is in operation.

We now have a Michigan plan, where they have a medical service in the state, and also a Kansas plan. These two plans are interesting in that they vary in this one essential, and in only one essential. From the Michigan Medical Service we buy medical service to the veteran; and we pay the Michigan Medical Service for it. Dr. Callahan, the president of the Kansas Medical Society, for reasons perfectly good to that society, didn’t want it to participate in any of the financial arrangements between the Veterans Administration and the individual doctors. This was quite agreeable to us. The state society was to act only as an agent for the individual doctors of the state. In both plans we are to set up an administrative office in connection with the state agency, whether it is a prepayment medical service or a state association, taking away from

them, as much as possible, the administrative work connected with service to the veterans, and to provide an agency which can immediately determine service connection and authorize outpatient treatment.

We should like to deal with every other state in the Union. We are so limited in staff that it is difficult for us to get around and interview you; but we have immediately seized on every proposal that has been made and have worked out agreements that were mutually satisfactory.

In conclusion, I want to assure you that, even though I have spent thirty years in a highly organized government service of medicine, I should deeply regret a government control of the medical profession. I have a great respect for the profession of medicine. I was brought up in an atmosphere of medicine. I have a respect for the dignity of the profession. My grandfather was a physician. My father was a physician. I have respect for organized medicine. My grandfather and my father and myself were at one time paying members of this Association. They kept on paying until they died; but, by the courtesy of this great Association, when I put on a uniform as a career I was made a Fellow, which I have been for many years. Before I joined the Army I too was a member of my county medical society down in Indiana and my state medical society and the American Medical Association. So organized medicine is nothing new to me.

The people in this country have not lost any respect for the physicians of this country. It has been stated today on this platform that there is some doubt as to whether or not the people of the country have lost confidence in the organization of medicine. Whether this is true or not, it is something to be considered.

How better can we establish this great organized profession in the esteem of the people of this country than for us together to attack this great public problem and show our people that a free and unregimented and ungoverned profession can solve the problem and that it is not necessary for the government to tell the medical profession how to run its business? I am just as much interested as you are in keeping the government out of the medical business. I am committed to only one principle, that the veteran shall receive the best in American medicine. I can't support any program which denies him the best in American medicine, and I am quite sure it will be a long time before we find the best in American medicine, in any quantity at least, in other than the civil practice of medicine.

If I am not permitted to bring the best in American medicine to the veteran, I shall withdraw at once from the program. I shall neither let down the veteran nor betray our own great profession.

The Speaker, with permission of the House and General Hawley, referred the address to the Reference Committee on Medical Care of Veterans for a report.

Resolution on Survey of Medical Societies in Metropolitan Centers Re Qualifications of Their Physicians

Dr. C. B. Conklin, District of Columbia, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The charge is frequently made that in metropolitan centers of the United States there is no reliable source of information with respect to the qualifications of physicians, especially if they are engaged in specialties; and

WHEREAS, In the opinion of the Medical Society of the District of Columbia it is desirable for medical societies to make available to the public such information about physicians; and

WHEREAS, The Medical Society of the District of Columbia has classified its members according to type of practice, setting up qualifications for listing in the specialties and in so doing has rendered a public service; and

WHEREAS, The public has taken full advantage of an information center established by the Medical Society of the District of Columbia, calls for information having steadily increased and commendations having been received from business establishments, the government and other institutions and organizations; therefore be it

Resolved, That the House of Delegates of the American Medical Association instruct the Secretary of the Association to make a survey of the medical societies in the metropolitan centers of the United States to ascertain to what degree they have made information with respect to the qualifications of their physicians available to the public and, where this has not been done, recommend that such classification be undertaken.

Resolution on Development of Specific National Health Program

Dr. C. B. Conklin, District of Columbia, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The Medical Society of the District of Columbia has long favored the adoption of a constructive program by the American Medical Association where social and economic issues relating to medicine are concerned; and

WHEREAS, In recent months there have been encouraging signs of positive action by the Association's Council on Medical Service and Public Relations; and

WHEREAS, In the opinion of the Medical Society of the District of Columbia efforts should be continued to project a program which will receive wide public support; be it therefore

Resolved, That the House of Delegates of the American Medical Association instruct its Council on Medical Service and Public Relations to proceed as promptly as possible with the development of a specific national health program, with emphasis on the nationwide organization of locally administered prepayment medical plans sponsored by medical societies to be submitted to the House at its meeting in 1946 for its consideration.

Resolutions on Use of Sulfonamides

Dr. C. W. Lane, Section on Dermatology and Syphilology, presented the following resolutions adopted by the section at its 1944 session, which were referred to the Reference Committee on Miscellaneous Business.

Dr. Howard Fox and Dr. Marion B. Sulzberger presented the following resolutions, which were passed by the section:

WHEREAS, Local and general sensitization to sulfonamides sometimes of a serious nature are being reported with increasing frequency following topical applications in relatively minor diseases; and

WHEREAS, The local use of these drugs may prevent their subsequent administration in illnesses of a serious nature; be it

Resolved, That the Section on Dermatology and Syphilology condemns the present indiscriminate local use of sulfonamides in diseases in which other ordinarily less harmful remedies are equally efficacious; and be it further

Resolved, That a copy of this resolution be sent to the Food and Drug Administration of the federal government.

Resolutions on Minimum Wage Standard

Dr. F. W. Winslow, New York, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The House of Delegates of the Medical Society of the State of New York agrees fully with the sentiments expressed by Dr. Edward R. Cunniffe, president of the society, regarding the advisability of organized medicine showing its attitude on matters concerning the economic welfare of the public; therefore be it

Resolved, That the House of Delegates go on record as favoring a minimum wage standard sufficiently high to permit the worker to be and to remain an independent individual able to pay his or her way in the purchase of the necessities of life; and be it further

Resolved, That the House of Delegates of the American Medical Association be urged to adopt a similar resolution; and be it further

Resolved, That the House of Delegates of the American Medical Association is in accord with these sentiments.

Resolution on Change in System of Medical Care

Dr. T. K. Gruber Michigan, presented, without reading, a Resolution on Change in System of Medical Care, which was referred to the Reference Committee on Legislation and Public Relations.

Resolutions on Transfer of Children's Bureau

Dr. O. W. H. Mitchell, New York, presented the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The U. S. Public Health Service is the official agency of the federal government primarily responsible for the prevention of disease and the protection of the public health; and

WHEREAS, The U. S. Public Health Service carries on these activities through the state departments of health and other state agencies in the field of public health; and

WHEREAS, The health services for mothers and children now conducted by the Children's Bureau of the Department of Labor parallel and in many instances overlap the responsibilities of the Public Health Service and require duplication of district facilities and personnel and a confusing duplication of federal relationship with state health departments and other state agencies in the field of public health; and

WHEREAS, It would be more logical, more effective and more economical to have all public health responsibilities concentrated in one federal agency and establish one direct channel of relationship with state health departments; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York hereby memorializes the House of Delegates of

the American Medical Association to petition the Congress and the President of the United States to transfer the personnel, facilities and budget of the Health Services of the Children's Bureau from the Department of Labor to the U. S. Public Health Service; and be it further

Resolved, That the House of Delegates of the American Medical Association directs that a petition be sent by the proper officers to the Congress and the President of the United States urging this transfer of the personnel, facilities and budget of the Health Services of the Children's Bureau from the Department of Labor to the U. S. Public Health Service.

Resolution on Opposition to H. R. 2969

Dr. E. M. Gans, Montana, presented, without reading a Resolution on Opposition to H. R. 2969, which was referred to the Reference Committee on Legislation and Public Relations.

Resolutions on Opposition to H. R. 525 and S. 1271

Dr. Stanley H. Osborn, Section on Preventive and Industrial Medicine and Public Health, presented the following resolutions, which were referred to the Reference Committee on Industrial Health:

WHEREAS, There has been introduced into Congress two bills, H. R. 525 and S. 1271, which propose an extension of the activities of the Department of Labor to undertake industrial hygiene activities; and

WHEREAS, These bills empower the Secretary of Labor to make grants of money to state agencies administering labor laws to undertake industrial hygiene work; and

WHEREAS, Industrial hygiene is a function of public health authorities and is now being done by the United States Public Health Service and by the health departments of forty states; and

WHEREAS, Money for industrial hygiene purposes is already allocated by the United States Public Health Service to state departments of health through Sec. 314, Public Law 410, 78th Congress; and

WHEREAS, The undertaking of industrial hygiene activities by the Federal Department of Labor and state agencies administering labor laws, already being done by the United States Public Health Service and state departments of health would result in confusion and waste of public funds; therefore be it

Resolved, That the House of Delegates of the American Medical Association go on record as opposed to H. R. 525 and S. 1271 in their present form, which permit labor agencies to undertake industrial hygiene activities now being done by federal and state public health agencies; and be it further

Resolved, That any expansion of tax supported industrial hygiene services be developed in a manner to provide immediate or ultimate responsibility for direction of the program by the state departments of health in cooperation with the United States Public Health Service.

Resolutions on Earliest Possible Release of Physicians from Military Service

Dr. C. R. Keyport, Michigan, presented the following resolutions, which were referred to the Reference Committee on Postwar Planning:

WHEREAS, With the cessation of hostilities the need for medical officers in the armed forces is greatly reduced; and

WHEREAS, The President of the United States has announced that the number of civilian physicians was reduced by some 60,000 who volunteered for military service and was further reduced by more than 20,000 deaths among civilian physicians; and

WHEREAS, During the period of the war, replacement of physicians in civilian practice has been practically nil; and

WHEREAS, There is an urgent need for the return to civilian practice of many thousands of physicians now in the armed forces; therefore be it

Resolved, That the American Medical Association strongly urge that every physician in the armed forces who can possibly be spared and whose duties are not essential to the health and care of our own military personnel be released from service with least practicable delay; and be it further

Resolved, That copies of this resolution be forwarded to the members of both houses of the Congress of the United States.

Duration of Session

The Speaker requested the Reference Committee on Rules and Order of Business to bring in recommendations concerning the possibility of the adjournment of the House on Wednesday instead of Thursday.

Resolutions on Expansion of Medically Sponsored Voluntary Group Health Care Programs

Dr. James Stevenson, Oklahoma, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Group health care programs sponsored and operated by the medical profession in many parts of the country are providing the means whereby millions of persons are able to secure good medical care and hospital service on a voluntary budgeted basis; and

WHEREAS, This health care has been rendered in a manner highly satisfactory to both patient and physician, resulting in better understanding between the two; and

WHEREAS, The voluntary type of group health care is to be preferred, in the interest of the people's health, to compulsory, political control; and

WHEREAS, Some areas of the country have no such programs in operation at the present time; and

WHEREAS, A large proportion of the people desire group health service on a national basis; therefore be it

Resolved, That the president and other officers of every state medical association use their best efforts to secure prompt action by their state association in inaugurating new, or increasing the benefits of existing, prepayment health care programs in every state; and be it further

Resolved, That the Council on Medical Service and Public Relations of the American Medical Association be instructed by the House of Delegates of the American Medical Association to correlate the various voluntary state and local programs in order to develop a group health care plan on a national basis, with uniform principles, rates and reciprocity between all, for the benefit of subscribers located in all parts of the country.

Resolutions on Expediting Return of Physicians on Duty with Military Forces to Civilian Practice

Dr. Frank R. Reeder, Michigan, presented the following resolutions, which were referred to the Reference Committee on Postwar Planning:

WHEREAS, The Senate of the United States has seen fit, by Senate Resolution 134, to cause a subcommittee of the Senate Military Affairs Committee to investigate the disparity between the ratio of civilian doctors to the population as compared with the ratio of medical officers to soldiers; and

WHEREAS, In 1942 the War Manpower Commission set up the ratio of one doctor to each 1,500 of the civilian population as a safe ratio for adequate medical care in this emergency; and

WHEREAS, It is reliably reported that the civilian ratio is now one to 1,800, while the military ratio is one to 180; and

WHEREAS, Since 1942 there have been practically no replacements in the field of civilian medicine despite an annual death rate among civilian physicians of more than 7,000 and an appreciable increase in the total civilian population; and

WHEREAS, The Army is in the process of discharging several million men, thus reducing the over-all need for medical officers; and

WHEREAS, Rather than reducing the number of medical officers there has been a net gain of approximately 600 since Jan. 1, 1945; therefore be it

Resolved, That the House of Delegates of the American Medical Association, in convention assembled, commend this action on the part of the Senate of the United States and urges that every effort be made to expedite the return to civilian practice of every medical officer who it is found can be spared from military service without endangering the lives or health of our armed forces; and be it further

Resolved, That a copy of this resolution be forwarded to each member of the United States Senate and to the Secretary of War.

Resolution on Medical Care of Veterans

Dr. Frank R. Mount, Oregon, presented, without reading, a Resolution on Medical Care of Veterans, which was submitted to the Reference Committee on Medical Care of Veterans.

Resolution on Hospital Staff Meetings

Dr. Frank R. Mount, Oregon, presented, without reading, a Resolution on Hospital Staff Meetings, which was referred to the Reference Committee on Medical Education.

Resolution on Spokesman for American Medicine

Dr. L. S. Goin, California, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The past few years have seen the development of several organizations designed to protect the corporate body of medicine from governmental encroachment, this development being the reply to the obvious demand and need for such protection; and

WHEREAS, The American Medical Association only recently has created a Council on Medical Service and Public Relations, which by reason of red tape and administrative difficulties has scarcely yet begun to serve its real purpose; and

WHEREAS, The delegates from California believe in this Council, approve of its stated objectives and are desirous of so implementing the Council that it may in fact as well as in theory accomplish those things for which it was intended; now therefore be it

Resolved, That this House directs that the Council on Medical Service and Public Relations shall be the sole spokesman for American medicine; that it shall be given whatever funds it may require to carry out the purposes for which it is intended, and that the Council be directed to retain an executive for full time service, with such secretarial assistance as he may require, the House of Delegates stating explicitly that the qualifications of such executive shall be determined only by the Council.

Resolution on Council on Medical Service and Public Relations

Dr. Dwight Wilbur, California, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The American Medical Association has created a council on public relations, known as the Council on Medical Service and Public Relations, which Council is charged with the responsibility of representing the American Medical Association to the public and governmental agencies of the United States; and

WHEREAS, The presentation of the official point of view of the American Medical Association by other councils, committees and individuals leads but to confusion and to different and divergent views, with the effect of apparent disunity in the profession; and

WHEREAS, At this time the profession is in need of greater unity than ever before in its history; therefore be it

Resolved, That the Council on Medical Service and Public Relations shall be the sole agency for presentation of the attitude of the American Medical Association relative to matters in which the organized profession should or must make representation to the public or to the government.

Resolutions on Willingness to Cooperate in National Conference of Labor

Dr. A. F. R. Andresen, for the Medical Society of the State of New York, presented, without reading, Resolutions on Willingness to Cooperate in a National Conference of Labor, which were referred to the Reference Committee on Legislation and Public Relations.

Resolution on Asphyxial Accidents

Dr. J. Stanley Kenney, New York, presented a resolution dealing with asphyxial accidents, requesting its reference to the Council on Medical Education and Hospitals. The resolution was so referred.

Resolutions on Prompt Discharge of Medical Officers

Dr. Ivan Fawcett, West Virginia, presented the following resolutions, which were referred to the Reference Committee on Postwar Planning:

WHEREAS, Many complaints have come to us that medical officers are being kept in the Army with little or no work to do; and

WHEREAS, Many complaints are coming that medical officers since V-J day are being given combat training without any probability of it ever being useful to them in after life; and

WHEREAS, The need for civilian physicians, certainly as far as West Virginia is concerned, is very acute, some emergencies finding medical care unavailable; therefore be it

Resolved, By the Council of the West Virginia State Medical Association, that we urge on the Surgeon General of the Army and of the Navy the necessity for prompt discharge of all medical officers who can possibly be spared from the armed services; and be it further

Resolved, That a copy of these resolutions be sent to each Senator and each Representative from West Virginia, asking their aid in securing the release to civilian life of West Virginia medical officers in the armed services not actually needed; and be it further

Resolved, That a copy of these resolutions be sent to our representatives in the House of Delegates of the American Medical Association with the request that they present this matter to the House of Delegates of the American Medical Association for appropriate action.

Resolution on Establishment of Section on General Practice

Dr. H. A. Luce, Michigan, presented, without reading, a resolution dealing with the establishment of a new section, which was referred to the Reference Committee on Sections and Section Work.

Appeal from Medical Director of Northern Permanente Foundation from Action of Washington State Medical Association

Dr. Olin West, Secretary, at the request of the Board of Trustees, presented, without reading, an appeal from the medical director of the Northern Permanente Foundation, which was referred to the Reference Committee on Legislation and Public Relations.

Communications on Social Hygiene

Dr. Olin West, Secretary, presented, without reading, communications referring to social hygiene, which were referred to the Reference Committee on Hygiene and Public Health.

The House recessed at 5:40 p. m. to meet at 10 a. m., Tuesday, Dec. 4, 1945.

Second Meeting—Tuesday Morning, December 4

The House of Delegates was called to order at 10:10 a. m. by the Speaker, Dr. H. H. Shoulders.

Roll Call

On motion of Dr. Arthur J. Bedell, Section on Ophthalmology, duly seconded and carried, the House dispensed with the roll call.

Presentation of Minutes

Dr. George W. Kosmak, New York, moved that the House dispense with the reading of the minutes. The motion was duly seconded and carried.

Report of Reference Committee on Credentials

Dr. G. Henry Mundt, Chairman, reported that one hundred and seventy members of the House of Delegates had been registered.

Report of Reference Committee on Rules and Order of Business

Dr. Francis F. Borzell, Chairman, presented the following report:

Your Reference Committee on Rules and Order of Business recommends to the House of Delegates the following order of business: Tuesday: Proceed with the Order of Business for today as published on page 24 in the Handbook; Wednesday: Convene at 9:30 for the reception of reference committee reports and other business and recess in time to reconvene at 2 p. m., and proceed with the Order of Business scheduled for Thursday as published on page 25 of the Handbook; adjournment at the close of this session unless necessary business requires the House to reconvene on Thursday morning.

Respectfully submitted.

FRANCIS F. BORZELL, Chairman.
E. G. WOOD.
F. S. CROCKETT.
SAMUEL J. MCCLENDON.
LUCIUS F. DONOHUE.

Dr. George W. Kosmak, New York, moved that the report of the reference committee be adopted. The motion was duly seconded and carried, after it was definitely stated that the report carries the instruction that the election of officers would take place on Wednesday instead of Thursday.

The Speaker announced that a two-thirds vote of the House was necessary before the date of holding elections may be changed. He called for a rising vote, which indicated that the date of election was changed from Thursday, December 4, to Wednesday, December 5, by a vote of 110 for to 4 against.

Report of Reference Committee on Sections and Section Work

Dr. William Weston, Chairman, presented the following report, which was adopted on motion of Dr. H. B. Everett, Tennessee, duly seconded and carried:

Your reference committee approves a resolution by the Council on Scientific Assembly and by the Michigan State Medical Society and recommends that a proper amendment to the By-Laws be made to include a new section to be known as the Section on General Practice.

Respectfully submitted.

WILLIAM WESTON, Chairman.
O. H. WEAVER.
HUGH SMITH.
WARREN L. ALLEE.

Report of Reference Committee on Miscellaneous Business

Dr. James R. Reuling Jr., Chairman, presented the following report:

1. Resolutions on Use of Sulfonamides: The resolutions introduced by Dr. C. W. Lane, Section on Dermatology and

Syphilology, regarding the local and general sensitization to sulfonamides was considered. Your reference committee agrees in principle with the purpose of the resolutions and recommends that the Council on Pharmacy and Chemistry use all means at its command to implement the purpose of the resolutions.

2. Resolutions on Minimum Wage Standard: With respect to these resolutions introduced by Dr. F. W. Winslow, New York, your reference committee submits that the House of Delegates of the American Medical Association has always recognized the fact that the American workman should receive a sufficient wage so that they may all become independent individuals able to pay his or her way in purchasing the necessities of life. Your reference committee recommends that this principle be reaffirmed.

3. Resolution on Proposed International Congress on Tropical Medicine: Your reference committee has changed the last part of that resolution, as follows:

Resolved, That the American Medical Association heartily endorse the proposal of the American Academy of Tropical Medicine that an International Congress on Tropical Medicine and Malaria be held in the United States at an early date and that the American Medical Association join with the American Academy of Tropical Medicine in petitioning the State Department of the United States government officially to sponsor and invite international participation in such a gathering and direct the Secretary of the American Medical Association to advise formally the State Department of this endorsement; and be it further

Resolved, That the Board of Trustees of the American Medical Association be authorized and empowered to appoint a member of the American Medical Association officially to represent this Association at such an International Congress on Tropical Medicine and Malaria.

Respectfully submitted,

JAMES R. REULING JR., Chairman.
STEPHEN E. GAVIN.
HENRY A. LUCE.
LEONARD W. LARSON.
WILLIAM BATES.

On motions of Dr. Reuling, duly seconded and carried after discussion, the first and third sections of the report of the reference committee were adopted.

The second section of the report was tabled on motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by several and carried by a rising vote of 67 to 29.

On motion of Dr. Reuling, duly seconded and carried, the report of the reference committee was adopted as a whole with the exception of the section that was tabled.

Resolutions Rereferred

The Speaker, on motion of Dr. James R. Reuling Jr., New York, duly seconded and carried, received permission to refer the two resolutions presented by delegates from California, previously referred to the Reference Committee on Legislation and Public Relations, to the Reference Committee on Executive Session.

Report of Reference Committee on Medical Care of Veterans

Dr. W. G. Phippen, Chairman, presented the following report:

1. Address of Major General Paul R. Hawley: Your reference committee was asked to consider and comment on the address of Major General Paul R. Hawley.

Your reference committee was impressed with the sincerity and straightforwardness of General Hawley's remarks and feels that the members of the House of Delegates were likewise impressed with the desire and intention to give wounded and sick veterans the best possible medical care. It feels that he is fully cognizant of the deficiencies in the care of veterans after the first world war and some of the causes thereof and is determined to avoid them. The emergence of the medical department from the domination of lay administrators is evidence of this intent. He reasons that if a full time corps of medical officers could not take care of 4,000,000 veterans well, it certainly cannot take care of 20,000,000. He therefore looks to organized medicine to help, and largely on its own terms. He assures us that this in no way implies an entering wedge for the government control of medicine, a situation he would

deplore as much as we. It is the intention of the Veterans Administration to attract young physicians returning from the service, both to staff positions on a part time basis and to residencies, and to utilize the services of specialists wherever possible. General Hawley deplors the pressure brought to bear by Congress to force the Veterans Administration to take over army and navy hospitals but fears some new hospitals must be constructed. He is finally convinced however that, if built, they should be built where good medical service is available.

In outpatient care the Veterans Administration must lean most heavily on organized medicine. General Hawley wants the veteran to have free choice of his physician and believes this possible if all physicians participate. One difficulty that he points out is that the veteran is allowed outpatient care at government expense only for a service connected disability, which must be established before the treatment begins. Several plans for this outpatient service are being tried. One in Monmouth County, N. J., focuses around a liaison committee of the county medical society to provide proper screening and proper fees and to see that adequate treatment is provided. In Michigan the Veterans Administration buys service from the Medical Service Corporation. In Kansas the state association acts as agent for the veterans. The Veterans Administration sets up an administrative office in each state. Throughout his address General Hawley expressed absolute confidence in organized medicine and was loud in his praise of what it has accomplished, particularly in the education of doctors.

Your reference committee therefore recommends that the House of Delegates pledge its support to General Hawley in his effort to provide the best medical care under the Veterans Administration.

2. Principles Dealing with Medical Care for Veterans Adopted by Medical Society of New Jersey and Resolution on Medical Care of Veterans: Your reference committee was also asked to consider three resolutions, all pertaining to the medical care of veterans. Those resolutions presented from New Jersey and Oregon we feel have been fully covered in principle by the action on the address of Major General Hawley just considered by the House and need no further action.

The committee begs the indulgence of the House for permission to make a supplementary report concerning the third resolution.

Respectfully submitted,

WALTER G. PHIPPEN, Chairman.
FORREST L. LOVELAND.
JAMES C. SARGENT.
HENRY R. VIETS.
LELAND S. MCKITTRICK.
PARKE G. SMITH.
BRITTON E. PICKETT SR.

The first section of the report of the reference committee, referring to the address of Major General Hawley, was adopted without dissenting vote, on motion of Dr. Phippen, duly seconded and carried.

Dr. Phippen moved that the second section of the report of the reference committee, dealing with two resolutions on medical care of veterans, be adopted. The motion was duly seconded and carried.

The House, on motion duly made, seconded and carried, recessed at 11 a. m. to reconvene at 11:30 a. m.

The Speaker called the House to order at 11:45 a. m.

Communication Rereferred

The Speaker, on motion of Dr. Arthur J. Bedell, Section on Ophthalmology, duly seconded and carried, rereferred to the Judicial Council the appeal from the Medical Director of the Northern Permanente Foundation from the action of the Washington State Medical Association which had been referred to the Reference Committee on Legislation and Public Relations.

Report of Reference Committee on Medical Education

Dr. Fred M. Smith, Chairman, presented a report, which on motion, duly seconded and carried, was adopted section by

section and as a whole as amended. The amended report reads as follows:

1. The report of the Council on Medical Education and Hospitals as it appears in the Handbook of the House of Delegates, pages 139-162. Your reference committee approves this report.

2. The Supplementary Report of the Council on Medical Education and Hospitals recommending support of the proposals in the report of Vannevar Bush to the President: Your reference committee also approves this report with the addition of the following paragraph:

"Of the legislation thus far introduced into Congress, the Magnuson bill (S. 1285) most nearly follows the recommendations of the Bush report, especially as regards the method of appointment and organization of the National Research Foundation. The recommendations of the Bush report and the provisions of the Magnuson bill on this question give more promise of achieving the desired ends than do the provisions of other bills before Congress."

3. Resolution on Asphyxial Accidents: Regarding the resolution concerning instruction of doctors of medicine in the treatment of asphyxial accidents, your reference committee approves the resolution in principle and recommends that it be implemented by sending reprints of the survey report by the Council on Physical Medicine of the American Medical Association published in *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* on Oct. 6, 1945 to the heads of the physiology, surgery and, if possible, obstetric departments of approved medical schools as well as to hospitals approved for internship and residency training.

4. Resolution on Hospital Staff Meetings: Regarding the resolution concerning the frequency and content of hospital staff meetings, your reference committee recommends that the wording of the resolution be changed as follows:

"Resolved, That the frequency of staff meetings in a hospital should be determined by the needs of the hospital itself and in conformity with the regulations set forth by the House of Delegates in the 'Essentials of a Registered Hospital' reading as follows:

"Staff meetings should be held for the review of the work of the hospital, the discussion of results, the report of autopsies, pathologic studies, presentation of papers and such other matters as concern the professional work of the hospital."

5. The recommendation of the Council on Medical Service and Public Relations that "... the American Medical Association request the Procurement and Assignment Service and the Army, Navy and Public Health Service to ascertain at the earliest time the future policy relating to the deferment of medical officers to serve as residents ...": Your reference committee finds that this has already been carried out and the policies of these governmental agencies were published in *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, Nov. 17, 1945, page 808, under the title "Reconversion of the 9-9-9 Program."

6. The further recommendation of the Council on Medical Service and Public Relations for "... the more prompt approval of hospitals for residencies ... and for arrangements to provide ... temporary approval until formal inspections can be made": Your reference committee finds that this has been receiving the attention of the Council on Medical Education and Hospitals, which is developing a plan to meet these ends in collaboration with the Advisory Board for Medical Specialties and the various American boards in the specialties. It approves of the recommendation.

7. Resolution on Early Return of Physicians and Medical Students Now in Military Service: Your reference committee approves this resolution with the following modified wording:

"Resolved, That the American Medical Association and its official representatives continue to support strongly such programs as may be desirable to assure not only the early return of medical veterans to civilian practice but also the early return from military service of qualified medical and premedical students whose training was interrupted by induction into the armed forces. The strongest efforts directed toward the deferment of qualified premedical students should also be continued."

8. Resolutions on Appointment of Committee for the Studying of Nursing Problems and Education: Your reference committee approves the resolutions with the following rewording:

"Resolved, That the activities of the Council on Medical Education and Hospitals of the American Medical Association, collaborating with the

National Nursing Council for War Services, the Special Committee on Accrediting of the National League of Nursing Education, the National Organization of Public Health Nurses and the National Association of Practical Nurse Education, be continued and that there be carried out a joint exploration into the problem of nursing education, establishment of national standards in nurse education, definition of the aims to be sought in nursing education and the level of professional competence most desirable among nurses; and be it further

"Resolved, That the Board of Trustees of the American Medical Association give consideration to lending financial assistance in the furthering of these goals, especially as regards the establishment of acceptable national standards for schools of nurse education."

Respectfully submitted,

FRED M. SMITH, Chairman.
THOMAS S. CULLEN.
GEORGE W. KOSMAK.
LEON J. MENVILLE.
A. W. ADSON.

Proposed Amendments to By-Laws, Chapter XV

Dr. A. A. Walker, Alabama, presented the following proposed amendments to the By-Laws, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws:

In order to make effective the recommendation of the Council on Scientific Assembly creating a Section on General Practice, which recommendation has received the approval of this House, the following amendments to the By-Laws are hereby proposed: Change chapter XV, section 1, subdivision 1, to read "Internal Medicine." Change chapter XV, section 1, subdivision 17, to subdivision 18, and insert a new subdivision 17 to read "General Practice of Medicine."

Resolutions on Health Legislation Beneficial to the People

Dr. H. H. Bauckus, New York, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, It is the earnest desire of the medical profession of this country to provide better health care for the American people and improve health facilities and standards, therefore be it

Resolved, That the following principles for a health legislation program be adopted:

1. Establishment in the President's cabinet of a Secretary of Public Health and Medical Welfare, who shall be selected from the ranks of actively practicing physicians and under whose jurisdiction every federal bureau and office whose duties are related to health and medical welfare shall be grouped;

2. Encouragement of medical and other scientific research and study for the continuous improvement of medical care by government grants-in-aid;

3. Provide federal or state loans or guaranties of private loans for the expansion of hospital and educational facilities, the operation of same to be entirely supervised, controlled and carried on by those who own such facilities and by the medical profession;

4 (a). Establish statewide voluntary nonprofit health care programs, in every state, based on the free choice of purveyors of health care; such programs shall act as a service plan to all in groups classified as within a special income level as determined by the plan in each state or regional unit; as an indemnity plan for those classified as above that income level by each state or regional unit; as a service plan to the indigent and semi-indigent by contractual arrangement for payment of charges from county, state or federal funds; as a service plan for all other governmental categories eligible for health care; as a service plan for all physicians' services to veterans of the armed forces for all illnesses or disabilities eligible under the law;

4 (b). Any further federal or state programs for expansion of medical service to be developed within the structure of the before described program;

4 (c). National cooperation with the proposed plans of Major Gen. Paul R. Hawley of the Veterans Administration in the therapeutic administrations to veterans for service connected disabilities. Also for the development of veteran facilities as teaching hospitals under the medical direction of civilian consultants in the respective specialized medical departments;

4 (d). All statewide medical care programs on either a service or indemnity care basis shall be incorporated under special state enabling acts or by already existing state statutes relating to nonprofit producers' cooperatives. This will provide for either a prepayment or a reimbursement contractual service;

4 (e). Group cooperation and reciprocity, on a national level, by all voluntary state medical and hospital care (Blue Cross) programs should be accomplished;

5. We suggest establishment in communities where feasible of a public information and educational service adequately financed, to prevent illness, to provide hygienic and sanitary measures and to inform where to go to seek help when ill or injured;

6. The function of government, federal and state, should be to encourage and assist, rather than to compete with, reputable voluntary health insurance plans, and be it further

Resolved, That every state medical society be invited to study, adopt and activate these principles on the state level and that they be submitted to the Council on Medical Service and Public Relations of the American Medical Association for immediate consideration as a pattern for a national health program

Resolution on National Physicians Committee

Dr. G. Henry Mundt, Illinois, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The members of this House of Delegates as well as physicians throughout the United States are cognizant of the increasingly effective work of the National Physicians Committee for the Extension of Medical Service in familiarizing the public with the values, methods and achievements of American medicine, therefore, be it

Resolved, That we reaffirm our approval of the activities of the National Physicians Committee and commend the Board of Trustees and the management of this institution for the effectiveness of their efforts

Resolution on Removal of Sex Discrimination from Medical Students

Dr. Emily D. Barringer, New York, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, In these postwar days, the equality of the sexes is one of the fundamental concepts of freedom on which a true and lasting peace may be built and so was voiced at the San Francisco Conference, and

WHEREAS, There is a recognized shortage of physicians to meet the postwar needs; and

WHEREAS, The quota of women students is still limited in the medical schools and women physicians are still approximately only 5 per cent of the total number of licensed physicians, and

WHEREAS, In a recent article in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION statistics show that a high percentage of women physicians make use of their education and continue active in their medical work, therefore be it

Resolved, That the American Medical Association go on record as approving the removal of sex discrimination from the medical student and that henceforth a woman medical student be judged purely by her individual qualifications

Resolutions on Modern Medical Public Relations

Dr. C. C. Sherburne, Ohio, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The economic trends of medicine point to an increasing effort on the part of organized minorities to regiment medicine; and

WHEREAS, The medical profession must take the public more and more into its confidence and tell all the people what medicine has done, is doing and intends to do for the public good, and

WHEREAS, Organized medicine urgently needs full time public relations activity not only on a national level but in every state of the Union to inform the public properly of its ideals and programs; therefore be it

Resolved, That the president and other officers of each state medical society use their influence to create a well financed public relations program in every state medical association at the earliest possible moment, and be it further

Resolved, That the Council on Medical Service and Public Relations of the American Medical Association be instructed by the House of Delegates of the American Medical Association to offer sustained leadership to state medical associations in their public relations programs, especially through the example of an immediate and outstanding program of medical public relations on a national level employing newspapers, commercial radio and movies, and all other modern mediums to bring medicine's glorious story to the American people

Resolution Rereferred

The Speaker, with the consent of the House, rereferred the resolution introduced by Dr. G. Henry Mundt to the Reference Committee on Miscellaneous Business instead of the Reference Committee on Legislation and Public Relations, to which it had previously been referred.

Resolutions on Formation of a National Health Congress

Dr. E. S. Hamilton, Illinois, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Proposed federal legislation to socialize health service would regiment doctors of medicine, dentists, hospitals, nurses, pharmacists and the people whom they serve, and

WHEREAS, The medical and allied health professions are intensely interested in bringing the greatest amount of health protection to all

people in this nation, through those means which will both preserve and extend the high standards of health now prevailing in this country; and

WHEREAS, In order to preserve quality health care for the people of this nation, each of these groups favors voluntary nonprofit prepayment plans instead of health services under compulsory governmental control; and

WHEREAS, While each of the groups in the health field has its own organization, working independently for the preservation of the American system of health care, an overall body or council is necessary to integrate the necessary collective thinking and activity of all organizations or units, and

WHEREAS, A serious and immediate need exists to develop a working liaison or congress of all agencies in the health field to secure the most effective results of action and public education; therefore be it

Resolved, That this body recognizes the need for a National Health Congress representative of the medical, dental, hospital, nursing pharmaceutical and allied professions, and that it approves the creation of such a coordinating body, and be it further

Resolved, That the Council on Medical Service and Public Relations of the American Medical Association be instructed by the House of Delegates of the American Medical Association to take the initiative in bringing together the interested groups to organize and incorporate immediately a National Health Congress, this congress to undertake to bring to all the people of this nation the complete benefits of modern medical dental science and the finest hospital facilities, to arrange for budgeting the cost of such services at monthly rates within the financial means of all Americans through voluntary, nonprofit health plans and to work speedily for the institution of such voluntary nonprofit health plans in those places or localities where they do not now exist.

The House recessed at 12:30 p. m. to meet in Executive Session at 2 p. m.

Tuesday Afternoon, December 4

The House of Delegates was called to order at 2 p. m. by the Speaker, Dr. H. H. Shoulders.

Report of Reference Committee on Rules and Order of Business

Dr. F. F. Borzell, Chairman, presented the following report, which, on motion of Dr. Robert E. Schlueter, Missouri, duly seconded and carried, was adopted:

Resolved, that the House now go into executive session to receive the report of the Reference Committee on Executive Session; and further be it

Resolved, that in addition to the accredited delegates and members of this House of Delegates the following may be in attendance: all accredited Fellows of the American Medical Association, officers, executive secretaries, lay secretaries who are approved by their accredited representatives, and editors of state and county societies, all others to be excluded.

Executive Session

The Sergeant-at-Arms polled the House, and after a short recess the House went into Executive Session.

Report of Reference Committee on Executive Session

Dr. Walter F. Donaldson, Chairman, presented the following report:

Three resolutions were referred to the committee, the first being a resolution regarding the activities of employees of the American Medical Association.

1. Resolution on Activities of Employees of American Medical Association: Your reference committee, aided by the comments of those who attended its hearing and by careful subsequent consideration, respectfully submits the following as its reaction to said resolution: Article 2 of the Constitution of the American Medical Association in twenty words sets forth the objects of the Association as being to promote the science and art of medicine and the betterment of public health. Section 1 of chapter VI of the Association's By-Laws states that the Board of Trustees shall appoint a General Manager and an Editor of THE JOURNAL and such assistants as may be necessary and shall determine their salaries and the terms and conditions of their employment. Therefore there seems to be little doubt that this resolution, if adopted by the 1945 House of Delegates, would, in effect, express a definite criti-

cism of the administration by the current Board of Trustees, whose multiple, year-round activities involve interim supervision and responsibilities for the success or failure of the policies and plans authorized and approved by each succeeding House of Delegates. Never has this Association stood in greater need of harmony between its legislative and administrative bodies than in the coming year 1946. Your Reference Committee on Executive Session is confident that the Board of Trustees is devoted to and capable of developing and maintaining the most efficient organization possible in the solution of the Association's present pressing problems, provided it has the support of the membership. To this end we would call to the attention of the entire membership of the Association that in the interim between meetings of the House of Delegates the Board of Trustees is an ever open and easily approached avenue for criticism or complaint. We also urge each member of the House of Delegates and others present to make it clear to their constituency that Fellows of the Association will always find warm welcome should they care to attend the meetings of the House of Delegates. Your committee heartily recommends this in order that the members throughout the constituent associations may be properly impressed with the democratic structure and processes of the House of Delegates. Your reference committee recommends to the House that this resolution be not approved.

2. Resolutions on Spokesman for American Medicine and Resolution on Council on Medical Service and Public Relations:

Your reference committee has taken the liberty of considering these resolutions jointly, which deal with expansion of the functions and the implication of the already multiple duties and activities of the Council on Medical Service and Public Relations. The present duties of this council are clearly defined in the By-Laws of the Association, which, of course, are at all times subject to amendment. The members of your reference committee have learned through interviews with members of similar councils of constituent state medical associations that it has been a common experience that the magnitude of the subjects assigned to each such council, none of which have been in existence more than two years, has tended to create a certain degree of confusion strongly suggestive that more time will be required for crystallization of activities within the limitations of time available to the personnel of such councils. The members of our committee learned at its hearing this morning, from a former and the current chairman of the Council on Medical Service and Public Relations, that the Board of Trustees of the American Medical Association has throughout shown a completely cooperative attitude and has been generous in the provision of funds and of personnel. It learned too from those who presented the resolutions that their basic objective was and is to encourage the Association and to assist in every way possible in bringing about not only effective but timely action by this new and important council.

With these ideas in view, your reference committee unanimously recommends that the resolutions dealing with the future of the Council on Medical Service and Public Relations be not approved.

Respectfully submitted,

WALTER F. DONALDSON, Chairman.
EDWARD JELKS.
JAMES R. McVAY.
WILLIAM R. BROOKSHER.
THOMAS P. MURDOCK.
W. CLARK BAILEY.
ALLEN H. BUNCE.

Dr. Donaldson moved that the first section of the report of the reference committee, disapproving the Resolution on Activities of Employees of the American Medical Association, be adopted, and the motion was seconded by Dr. A. A. Walker, Alabama. After discussion by several, it was moved by Dr. James P. Kerby, Utah, duly seconded and carried by a vote of 88 to 48 that the vote on the adoption of this section be by secret ballot.

The Speaker requested the tellers to spread the ballot for a vote on the adoption of the first section of the report of

the reference committee. The tellers spread the ballot, the Speaker declared the ballot closed and the Secretary announced that 166 votes had been cast, of which 106 were for the adoption of the first section of the report of the reference committee and 60 were opposed.

The Chairman ruled that the first section of the report of the reference committee, disapproving the Resolution on Activities of Employees of the American Medical Association, had been adopted.

It was moved by Dr. Donaldson that the second section of the report of the reference committee, disapproving two resolutions dealing with the functions of the Council on Medical Service and Public Relations, be adopted. Dr. L. S. Goin, California, desired to enter a motion for the amendment of one of the resolutions, which amendment he read and moved its adoption. The motion was seconded by Dr. John W. Cline, California. After discussion, the Speaker ruled that the House hear Dr. Donaldson's report before considering any amendment.

Dr. Donaldson completed the reading of the second section of his report and moved its adoption. Dr. L. S. Goin moved that this be rereferred to the reference committee, and the motion was seconded and carried after discussion by several and this section of the report of the reference committee was rereferred to it.

Report of Reference Committee on Legislation and Public Relations

Dr. E. S. Hamilton, Chairman, presented the following report:

Assigned to the Committee on Legislation and Public Relations was the message of President Harry Truman submitting a national health program on November 19 and the latest version of the Murray-Wagner-Dingell bill submitted to the Senate and the House of Representatives on the same day.

The President's program includes five features.

1. The first is the proposal to grant federal aid for the building of hospitals and health centers throughout the nation. The Board of Trustees of the American Medical Association has approved the principles of the Hill-Burton bill, and the committee recommends that the House of Delegates endorse this action of the Board as being within the program of constructive action toward improving the health of the American people.

2. The second recommendation of President Truman is for an extension of maternal and child health services. The Murray-Wagner-Dingell bill would make this effective by increased grants in aid through the Children's Bureau to the individual states. A much more far reaching proposal is that of the Pepper bill for maternal and child health. These programs would tend to turn over to a federal agency the medical care of every mother in childbirth and of the children of the United States up to the age of 21 years. This constitutes an insidious attempt to turn over to the federal government functions that are definitely those of the medical profession. In this connection the reference committee urges that the House of Delegates recommend again the removal of the Children's Bureau from the Department of Labor to the United States Public Health Service in the Federal Security Agency. The American Medical Association has always favored proper aid for the extension of maternal and child health services where the need can be shown.

3. The third feature of the President's message dealt with the development of the National Research Foundation. The Committee on Postwar Medical Service, the Council on Medical Education and Hospitals and the Board of Trustees of the American Medical Association have approved the principles of the Magnuson bill, which would place the control of the National Research Foundation under a scientific board of directors rather than under an individual director to be appointed by the President. Your reference committee approves the action taken by those official bodies of the American Medical Association and urges that the House of Delegates support their recommendation.

4. The fifth proposal in the President's program is compensation for the loss of earnings due to sickness. The American Medical Association through its House of Delegates has consistently favored such insurance. Your reference committee recommends that the House of Delegates again register its approval of such action.

5. Finally, the fourth proposal of President Truman and the main feature of the Wagner-Murray-Dingell bill is the creation of a federal system of compulsory sickness insurance. In commenting on this proposal your reference committee recommends that the House of Delegates endorse the following statement from the editorial published in *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, Dec. 1, 1945:

No one will ever convince the physicians of the United States that the Wagner-Murray-Dingell bill is not socialized medicine. By this measure the medical profession and the sick whom they treat will be directly under political control. By this measure the great system of private hospitals and community hospitals that has grown up in our country will depend for their continued operation on funds paid to them by a federal government agency. By this measure the philanthropic efforts for the care of the sick, which have been the pride of our nation, will be forever deterred. Through this measure competent young men who would enter the medical profession will be forced to seek other fields of action still remaining under our democracy which still permit the exercise of individual initiative and freedom of thought and action. By this measure doctors in America would become clock watchers and slaves of a system. Now, if ever, those who believe in the American democracy must make their belief known to their representatives, so that the attempt to enslave medicine as first among the professions, industries and trades to be socialized will meet the ignominious defeat it deserves.

Your reference committee recommends that the House of Delegates express official disapproval of section 4 of the Wagner-Murray-Dingell bill for the following reasons:

1. The Wagner-Murray-Dingell bill is founded on the false assumption that solution of the medical care problem for the American people is the panacea for all of the troubles of the needy.

2. This is the first step in a plan for general socialization not only of the medical profession but of all professions, industry, business and labor.

3. Positive proof exists from experience in other countries that inferior medical service results from compulsory health insurance.

4. A program such as outlined is enormously expensive. It will result in greatly increased taxes for the entire population of the United States.

5. Voluntary prepayment medical plans now in operation in many parts of the United States and which are rapidly increasing in number will accomplish all the objects of this bill with far less expense to the people, and under these plans the public will receive the highest type of medical care without regimentation.

Respectfully submitted,

EDWIN S. HAMILTON, Chairman.
LLOYD NOLAND.
JOHN J. MASTERSON.
EDWARD L. BORTZ.
RAYMOND L. ZECH.

Dr. Hamilton moved adoption of the first section of the report of the reference committee, dealing with President Truman's message on the proposal to grant federal aid for the building of hospitals and health centers, and the motion was duly seconded and carried unanimously.

It was moved by Dr. Hamilton that the second section of the report of the reference committee, concerning an extension of maternal and child health services, be adopted, and the motion was duly seconded. After discussion, it was moved by Dr. Arthur J. Bedell, Section on Ophthalmology, seconded and carried, that this section of the report of the reference committee be rereferred to it.

On motion of Dr. Hamilton, seconded and carried, the third section of the report of the reference committee, dealing with the development of the National Research Foundation, was adopted.

Dr. Hamilton moved, and the motion was seconded, that the fourth section of the report of the reference committee,

with respect to President Truman's message regarding compensation for the loss of earnings due to sickness, be adopted. On motion of Dr. Francis F. Borzell, Pennsylvania, seconded and carried, this section of the report of the reference committee was rereferred to it.

The fifth section of the report of the reference committee, recommending disapproval of section 4 of the Wagner-Murray-Dingell bill, was adopted on motion of Dr. Hamilton, seconded and carried.

On motion of Dr. Francis F. Borzell, Pennsylvania, seconded and carried, the House rose from Executive Session.

Tuesday Afternoon—Continued

On motion of Dr. Walter E. Vest, West Virginia, seconded and carried, the House reconvened in regular session.

Report of Reference Committee on Hygiene and Public Health

Dr. Felix J. Underwood, Chairman, presented the following report, which on motions of Dr. Underwood, duly seconded and carried, was adopted section by section and as a whole:

Your reference committee has considered that portion of the report of the Board of Trustees dealing with the activities of the Bureau of Health Education, as shown in the Handbook, pages 61-68. It notes with satisfaction the excellence of the report. It is in complete accord with the substance of the report and the work done and urges on the Board of Trustees the necessity of furnishing adequate funds to carry on and develop further the program and activities of this Bureau.

1. Present Views of Profession on Social Hygiene:

Your committee has considered the letter of Dr. Ray Lyman Wilbur to Dr. Olin West, under date of November 28, 1945, relative to previous resolutions as to social hygiene (a) as adopted in 1917: "1. That sexual continence is compatible with health and is the best prevention of venereal infections; 2. That steps be taken toward the eradication of venereal infections through the repression of prostitution, and by the provision of suitable recreational facilities, the control of alcoholic drinks and other effective measures; 3. That plans be adopted for centralized control of venereal infections through special divisions of the proper public health and medical services; 4. That the hospitals and dispensaries be encouraged to increase their facilities for early treatment and follow-up service for venereal diseases as a measure of national efficiency; 5. That the members of the medical profession be urged to make every effort to promote public opinion in support of measures instituted in accordance with these principles of action in the control of venereal diseases."

(b) as adopted in 1942: "First, that the control of venereal disease requires elimination of commercialized prostitution; second, that medical inspection of prostitutes is untrustworthy, inefficient, gives a false sense of security and fails to prevent the spread of infection; third, that commercialized prostitution is unlawful, and physicians who knowingly examine prostitutes for the purpose of providing them with medical certificates to be used in soliciting are participating in an illegal activity and are violating the principles of accepted professional ethics."

Your reference committee is in accord with the declaration of the House of Delegates of the American Medical Association at the annual session in 1917 and again in 1942 and recommends the reaffirmation of these principles and that the public health authorities and the medical profession of the country be entrusted with the responsibility of carrying them out.

2. Resolution on Christmas Seal Drive of National Tuberculosis Association: Your reference committee has considered the resolution presented by Dr. Burt R. Shurly, Michigan, relative to the distribution of the funds secured from the tuberculosis seal sale in Detroit. Except for this resolution and Dr. Shurly's personal remarks, your reference committee is not informed as to any change of policy on the part of the National Tuberculosis Association. It recommends that this resolution be referred to the Board of Trustees for such action as in its judgment is appropriate.

3. Resolutions on Transfer of Children's Bureau: Your reference committee has considered the resolution presented by Dr. O. W. H. Mitchell, New York, relative to the transfer of the health services of the Children's Bureau to the U. S. Public Health Service.

It is the opinion of your reference committee that the Children's Bureau of the United States Department of Labor should be transferred to the Federal Security Agency until such time as the Congress creates a national department of health with a qualified physician as its director with cabinet status, and it recommends that the House of Delegates of the American Medical Association go on record accordingly.

Respectfully submitted,

FELIX J. UNDERWOOD, Chairman.
WARREN F. DRAPER.
D. F. CAMERON.
WALTER E. VEST.
CREIGHTON BARKER.

Report of Reference Committee on Medical Care of Veterans

Dr. Walter G. Phippen, Chairman, presented the following report, which on motion of Dr. Phippen, seconded and carried, was adopted:

Your reference committee has thoroughly discussed the Resolutions on Future Medical Care of Veterans introduced by Dr. James C. Sargent, Wisconsin, and offers the following substitute resolution:

Resolved, That the House of Delegates of the American Medical Association at this time reaffirms its long established opposition to extending the benefits under the Veterans Administration to encompass those disabilities obviously not service connected.

Respectfully submitted,

WALTER G. PHIPPEN, Chairman.
FORREST L. LOVELAND.
JAMES C. SARGENT.
HENRY R. VIETS.
LELAND S. MCKITTRICK.
PARKE G. SMITH.
BRITTON E. PICKETT SR.

Reference Committee on Reports of Officers

Dr. Floyd S. Winslow, Chairman, presented the following report, which on motions of Dr. Winslow, duly seconded and carried, was adopted section by section and as a whole:

1. Address of Speaker of House of Delegates, Dr. H. H. Shoulders: Your reference committee views with commendation and profound appreciation the thoughts of our Speaker in reference to the ideals of medicine. He sounded a refreshing note in reviewing the impelling motif which has dominated this organization for nearly a century.

He particularly stresses the warning that in the efforts of the profession to stave off political encroachment it should not lose this impelling motif or shirk its responsibility for continuing the preservation of the best in American medicine.

2. Address of President-Elect Roger I. Lee: Dr. Lee, in his own inimitable style, delivered an address in which he gave utterance to his observations concerning organized medicine in America resulting from thirty years of continued activities in many capacities. Our sincere appreciation of his words can best be expressed by the recommendation that every member of the House read carefully his address when it appears in printed form.

Your reference committee recommends that this address be called particularly to the attention of the state and county societies. It recommends that they make use of their rights and duties as members of this democratic organization and instruct their delegates that action of this House of Delegates represents the majority opinion from the doctors of our country. It concurs with Dr. Lee's opinion and recommends to the House of Delegates the authorization of an ad interim meeting.

3. Address of President Herman L. Kretschmer: Your reference committee recommends particularly to the House of Delegates the constructive address of the retiring President, in

which he presents matured views on policy issuing from his recent experience as President and his long prior services as an officer of the Association. The specific recommendations made by Dr. Kretschmer are dealt with as follows: (1) Your reference committee approves his statements on the subject of regimentation of the practice of medicine.

(2) His suggested and well rounded plans regarding programs of county medical societies meet with the approval of the reference committee and it agrees with Dr. Kretschmer that more physicians should actively participate in the work of county medical societies and it recommends that his suggestion be brought to the attention of county and state medical societies.

(3) This reference committee recognizes the problems referred to by Dr. Kretschmer concerning availability of roentgenologic studies, but it believes that his statement should be clarified as follows: "With reference to the President's remarks about the desirability of surrendering to patients possession of films employed in x-ray examinations, the reference committee would point out that the Principles of Medical Ethics requires that 'in their consultation, the benefit to be derived by the patient is of first importance.' Your reference committee believes that adherence to this dictum will adequately protect the interests of patients who are referred to a radiologic consultant for examination by one physician and who later change to another attending physician. The American College of Radiology has promulgated principles for the guidance of all radiologists recommending that, when a patient changes the attending physician, the radiologist should freely transmit the result of his examination to the second doctor. Great harm would be done and disservice to the patient would result if, in practice, patients were given the possession of x-ray films which are the legal property of the radiologist or institution in which they were produced. In actual experience, patients who obtain possession of such clinical records too often take them to an irregular practitioner who is unqualified to interpret them or who may use them to the patient's own injury by reading into them nonexistent pathologic conditions. Any competent physician is entitled to inspect x-ray films used in an examination of his patient regardless of who ordered the examination. It should be emphasized that the roentgenologist considers it ethically obligatory to furnish reports and, as requested, to lend films to the physician currently treating any patient."

(4) Your reference committee decries the exploitation of the hormones as brought up by our President. It wishes to emphasize the necessity of all therapy being based and established on scientific facts and not on claims of the manufacturers and their agents.

(5) Your reference committee emphasizes the recommendation in the President's address that the public be educated to understand that the use of animals is inseparable from the modern practice of medicine and indispensable to progress in the control and alleviation of disease. It suggests, therefore, that the term "animal experimentation" with its unfortunate connotations be replaced with the term "utilization of animals in medical instruction, research, diagnosis and therapy."

(6) As lack of precise knowledge of the pharmacologic action of marihuana delays legal enactment possibly needed and creates confusion in medical practice, it is considered urgent that studies and actions of the effects of the drug be carried to early completion.

(7) Experience shows that it is necessary that steps be taken to maintain an uninterrupted supply of personnel for medicine and its allied sciences during national emergencies.

(8) Your reference committee recommends encouragement of further study in the field of chronic illness.

(9) The subject of returning medical officers is being handled as a problem of professional rehabilitation.

Respectfully submitted,

FLOYD S. WINSLOW, Chairman.
THOMAS K. LEWIS.
DEERING G. SMITH.
HAROLD W. SMITH.
GEORGE H. CURFMAN.

Report of Reference Committee on Postwar Planning

Dr. Charles H. Phifer, Chairman, presented the following report, which on motion of Dr. Phifer, duly seconded and carried, was adopted section by section and as a whole:

1. Report of the Committee on Postwar Medical Service: In reviewing the report of the Committee on Postwar Medical Service, your reference committee was impressed at once not only by the plan and scope of the work of this committee but also by the thoroughness and detail of its efforts. It would commend to the delegates and to all members of this Association the careful reading of this report and particularly the published proceedings of this committee which have appeared from time to time in the columns of *THE JOURNAL*.

These studies will present the accumulation of a mass of information and data which should contribute in a large measure to the ultimate solution of many of the pending and vexing problems confronting us. We note with satisfaction the liaison effected with other national organizations and governmental agencies concerned with many of these same problems.

Your reference committee cannot commend too highly this type of constructive planning and takes this opportunity to compliment and felicitate the gentlemen who have given so freely of their time and great abilities to do this work. The committee has displayed mature comprehension and understanding in the handling of numerous confusing and controversial subjects.

Your reference committee desires also to congratulate the Board of Trustees for its wisdom and judgment in appointing as personnel with this committee men of the caliber and proved competence who make up its membership. It hopes and would respectfully suggest that this House of Delegates express its appreciation and full support of the work the committee is doing. Your reference committee recommends to the House of Delegates the continuation of this Committee on Postwar Medical Service at the pleasure of the Board of Trustees.

2. Conditions in the Philippines: Your reference committee desires to state that after carefully reviewing the special report of Dr. James E. Paullin to the Board of Trustees in reference to the tremendous destruction of hospitals, university buildings, medical schools, libraries and churches in the Philippine Islands it is deeply impressed with the seriousness of the situation and presents for your approval the following resolutions:

WHEREAS, The Board of Trustees of the American Medical Association implemented a special health survey of the Philippine Islands; and

WHEREAS, This investigation discloses the serious need for surgical supplies, x-ray apparatus, drugs, chemicals and other necessary equipment; and

WHEREAS, The American Medical Association feels morally obligated to the members of the constituent medical society; be it

Resolved, That the House of Delegates of the American Medical Association request the Surgeon General of the U. S. Public Health Service and the Federal Security Administrator to use their influence in having any supplies or property not being used by our hospitals in Manila given to the civilian hospitals in the Philippine Islands and to the University of the Philippines; and be it further

Resolved, That a copy of these resolutions be sent to the Surgeon General of the U. S. Public Health Service, the Federal Security Administrator, Hon. Paul D. McNutt, the high commissioner of the Philippine Islands and the secretary of the Philippine Medical Association.

3. Resolution on Recognition of Physicians Who Served on Procurement and Assignment Service in Various States: Your reference committee considered the attached resolution presented by Dr. William Stovall, Wisconsin. The committee would like to restate for the information of all physicians that the idea of an organization like the Procurement and Assignment Service for Physicians, Dentists and Veterinarians was initiated by the the Committee on Medical Preparedness of the American Medical Association created by the House of Delegates. It was created by the executive order of the President of the United States on the recommendation from this body. It represented an exceptional and singular achievement in the war effort. It operated quite apart from the other functions of Selective Service. These professions were the only divisions of our civilian society accorded the right and privilege of processing its own men for military service. This was an outstanding voluntary service, and those physicians who served in the various capacities in this office did so unstintingly and unself-

ishly. It is the opinion of your reference committee that suitable recognition of these services will be forthcoming from the proper government authorities. Your reference committee recommends disapproval of this resolution.

4. Report of Section on Placement of Medical Officers of Council on Medical Service and Public Relations:

(a) Intern Resident Policy: Your reference committee has information that the recommendation in the resolution of the Council has been accomplished since it was adopted on October 19-20 by the Council.

The Vice Speaker assumed the chair.

(b) Payments Under Public Law 346: "It is recommended that all discharged medical officers be given terminal leave pay at the termination of their active duty and prior to the expiration of such accrued leave as they may have, thus enabling them to participate immediately in the benefits provided by Public Law 346 (78th Congress, G. I. Bill of Rights). Such a procedure will enable the returned medical officer to commence immediately his training in hospitals or medical schools after leaving the armed services." Your reference committee recommends the approval of the recommendation of the Council on this subject.

(c) Approved Hospital Residencies: Your reference committee is informed that the Council on Medical Education and Hospitals has endorsed this problem and it recommends its approval.

(d) The Bureau of Information: Your reference committee recommends approval of the recommendation of the Council with respect to the Bureau of Information.

"Each state medical society should be urged to establish an information service. This state information service should collect from various public and private agencies data relating to medical facilities, medical personnel or medical needs and other information concerning medical care within the state. This information service should at all times be in a position to furnish information concerning areas in need of physicians and a complete picture of the medical facilities, physical and economic aspects of any community within the state."

Your reference committee also recommends approval of the Council's recommendation regarding establishment of information services by constituent state medical associations.

5. Resolutions on Expediting the Return of Physicians on Duty with the Military Forces, Resolution on Prompt Discharge of Medical Officers and Resolutions on Earliest Possible Release of Physicians from Military Service: Your reference committee has received these three resolutions, the first one from Dr. Frank E. Reeder, Michigan, the second from Dr. Ivan Fawcett, West Virginia, and the third from Dr. C. R. Keyport, Michigan. As the figures contained in these resolutions are somewhat out of date, it is the opinion of your reference committee that these figures should be deleted, the three resolutions combined and acted on as one. Your reference committee is heartily in accord with the principles contained in all the resolutions, namely that those medical officers in our military forces who are not vitally needed should have immediate consideration for release, and an effort should be made promptly to initiate and consummate their immediate separation.

Resolved, that a copy of this recommendation be sent to the Secretary of War, the Secretary of the Navy, the Surgeon General of the Army, the Surgeon General of the Navy, the Surgeon General of the United States Public Health Service and the Federal Security Administrator.

Respectfully submitted,

CHARLES H. PHIFER, Chairman.
J. STANLEY KENNEY.
LEO G. CHRISTIAN.
F. J. L. BLASINGAME.
HARRY V. PARYZEK.
B. R. KIRKLIN.
J. MORRISON HUTCHESON.

Telegram on Deferment of Prospective Medical Students

Dr. Olin West, Secretary, presented the following telegram received from Drs. Harvey Stone, Baltimore, and Frank H.

Lahey, Boston, which was referred to the Reference Committee on Medical Education:

We suggest the adoption of this statement by the House of Delegates.

This society, in common with all other medical groups, views with apprehension the effects of the present regulation of Selective Service which makes no provision for the deferment of young men inclined for entrance into premedical education. It believes that continuation of this policy will inevitably result in a lessened production of doctors when more rather than less will be urgently needed.

At this time when veterans' needs, increased demands of military establishments for more doctors and greatly intensified concern with national health exists, the present program of Selective Service of cutting down on the supply of doctors is indefensible.

We therefore urge that the Military Affairs Committee of the Senate (House of Representatives) take immediate steps to correct this situation in the interests of the public welfare.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Thomas A. McGoldrick, Chairman, presented the following report, which on motion of Dr. McGoldrick, duly seconded and carried, after discussion, was adopted section by section and as a whole:

1. Proper Utilization of Services of Physicians in a National Emergency: This statement was formulated by a committee appointed by the Board of Trustees after giving consideration to a suggestion made by Dr. James E. Paullin with a view to proper utilization of the services of physicians in a national emergency.

2. Celebration of Centennial of the Association: The Board of Trustees suggested that the House of Delegates authorize the speaker to appoint a committee to work with the Board of Trustees in the development of a program for the celebration of the centennial in Atlantic City, and your reference committee recommends that the House of Delegates authorize the Speaker to appoint such a committee.

3. Report of Secretary:

A. Membership: Your reference committee notes with pleasure the gain in membership in spite of the war.

B. Fellowship: The decrease in the number of Fellows was more largely due to the fact that thousands of Fellows were serving with the armed forces in all parts of the world. Your reference committee recommends that this House of Delegates authorize the restoration of the names of all Fellows assigned to active duty if they so request.

C. Activities: Your reference committee notes the splendid way in which the many component bodies of the American Medical Association have dealt with the many problems of the times.

D. Appreciation: Your reference committee notes with deep appreciation the amount and high quality of service rendered by the Secretary. His service deserves special commendation because of the condition of reduced personnel under which his work was performed.

4. Plan of Distribution by the American Red Cross of the Dried Blood Plasma Declared Surplus by the Armed Forces: Your reference committee recommends approval of the plan submitted, which will be published at a later date.

5. Liaison Officers: Your reference committee endorses the commendation of the Board of Trustees for the fine services of the late Col. Charles G. Hutter, M. C., U. S. Army, of Lieut. Col. H. C. Luth and of Lieut. Col. R. D. Bickel, which were rendered in accord with the highest traditions of medicine and of the U. S. Army. It recommends that the House of Delegates approve these commendations.

6. Date of the San Francisco Session: The dates selected by the Board of Trustees for the San Francisco Session of the Association are July 1-5, 1946. Your reference committee recommends that the House of Delegates approve the place and dates for the 1946 session.

7. Report of Board of Trustees:

A. General Report: A study of the Report of the Board of Trustees as published in the Handbook and of the supplementary

report reveals the tremendous amount of work done by this body. It shows the amount of unselfish service to the many duties and responsibilities devolved on them. The very careful management of the income of the Association and the close attention to every expenditure for the protection of our resources should be fully recognized by every member of the medical profession. Your reference committee recognizes that the work of the Board has been performed under abnormal conditions of wartime and particularly with a greatly reduced personnel necessitated by government regulations. It notes with satisfaction the increased circulation of our journals and commends the maintenance of the high quality of the material offered by them.

B. Joint Committee on Physical Fitness: When the Congress of the United States failed to supply the necessary funds, this joint committee was forced to disband. The Board of Trustees recommended that organizations in the individual states cooperate with other agencies in the ultimate formation of a foundation under voluntary auspices to be known as the Keep Fit Foundation.

C. Bureau of Investigation: The work of the Bureau of Investigation by its constant collection and distribution of information has been of inestimable value to the state organizations, physicians, departments of government and the public at large. In 1944 there were 3,000 inquiries on 4,600 separate subjects. Among the leading subjects of inquiry were diabetes "cures," vitamin preparations, so-called "alkalizers," laxatives, cancer "cures" and various products that are advertised over the radio and in the lay press. It is urged that more physicians avail themselves of this valuable source of information.

D (1). Council on Physical Medicine: Your reference committee reads with great interest the report of the activity of the Council during the past year. The amount of work has been very great. The Council has made thirty-two reports, and other devices have been investigated and will be reported on later. Your reference committee noted the cooperation of the Council with the Federal Communications Commission in an effort to solve the problem of electrical energy from diathermy apparatus interfering with radio transmitters. It is expected that all diathermy equipment manufacturers henceforth will maintain the frequency within the limits prescribed and that within a period of probably five years the existing apparatus now held by physicians will be screened or new equipment purchased will be frequency controlled.

D (2). Artificial Respiration: A report of the survey of five years' study of devices and methods for artificial respiration has been completed and is ready for publication. However, since apparatus is seldom on hand in an emergency the Council has cooperated with the American Red Cross in educational activities promoting the manual method of artificial respiration.

E. Council on Foods and Nutrition: During the year this Council published a Handbook of Nutrition which had been prepared under its auspices. This contained the most recently available data on food values and enrichment regulations. It published also a number of reports on the nutritional value of certain foods and the effect of the addition of vitamins to them. From the public health point of view only the addition of vitamin D to milk is justified. One special report of this Council emphasizes the dangers inherent in the use of any chemical preservative in the home canning of foods. Your reference committee highly endorses the aims of this Council to encourage the production of high quality natural foods.

F. Bureau of Exhibits: Your reference committee notes the amount of work performed by the Bureau. The exhibits on fractures, burns and infectious and tropical diseases were demonstrated before many groups of our armed forces. In the selection and preservation of these films, emphasis was placed on their value to the general practitioner. There was an increased demand for motion pictures on the part of the profession. There were sent 575 pictures to 333 meetings, the chief recipients being army camps, medical schools, hospitals and county medical societies. These motion pictures, pamphlets and publications of the Bureau should be drawn to the attention of program committees of the various state societies.

G. American Health Resorts: Your reference committee knows that this committee has resumed its activities and should

become a source of much exact information to the medical profession.

Report of Reference Committee on Postwar Planning

Dr. Charles H. Phifer, Chairman, presented a report, which, as amended, reads as follows:

1. Resolutions on Creation of Committee on Medical Preparedness: Your reference committee recommends that the resolution be referred to the Committee on Military Service, which is to be appointed by the Board of Trustees, for its consideration and action.

2. Position of Surgeon General: It has been brought to the Committee's attention that the position of the Surgeon General in the armed service forces would indicate that full recognition has not been given to the Medical Department of the Army. It is the opinion of the medical profession that in order for the Medical Department to operate efficiently the Surgeon General should be on a higher level and be responsible directly to the chief of staff. Your reference committee concurs in this recommendation and asks that this be approved by the House of Delegates and a copy of the resolution be sent to the Secretary of War and the chairman of the Military Affairs Committee in the House and the Senate.

Dr. Phifer moved the adoption of the first section of the report of the reference committee, concerning Resolutions on Creation of Committee on Medical Preparedness, and the motion was duly seconded. After discussion, Dr. Phifer accepted a suggested amendment and moved the adoption of the first section of the report as amended, and the motion was seconded and carried.

On motion of Dr. Phifer, seconded and carried, the second section of the report of the reference committee, referring to the position of the Surgeon General, was adopted.

The report as a whole, as amended, was adopted on motion of Dr. Phifer, seconded and carried.

NEW BUSINESS

The Speaker resumed the chair and on motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded and carried, declared that new business would be eligible for introduction the next morning under the provisions of the report of the Reference Committee on Rules and Order of Business.

On motion of Dr. Francis F. Borzell, Pennsylvania, seconded and carried, the House recessed at 5:20 p. m. to meet at 9 a. m. Wednesday, December 5.

Third Meeting—Wednesday Morning, December 5

The House of Delegates was called to order at 9:25 a. m. by the Speaker, Dr. H. H. Shoulders.

NEW BUSINESS

Resolution on Woman's Auxiliary

Dr. Francis F. Borzell, Pennsylvania, presented the following resolution, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

WHEREAS, The object of the Woman's Auxiliary is to aid the American Medical Association in every way requested; and

WHEREAS, The most urgent need at the present time is for widespread dissemination of knowledge concerning the hazards of current medical legislation; therefore, be it

Resolved, That the House of Delegates of the American Medical Association requests the Woman's Auxiliary to use every avenue possible to bring such information to its members and through them to the public.

Motion on Federal Control of Practice of Medicine

Dr. W. W. Mott, New York, presented the following motion, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

I believe that this meeting should not adjourn without fulfilling its manifest duty to our fellow citizens, in issuing to them a clear and unequivocal warning of what adoption of a system of federal control of the practice of medicine will mean to them and to their children.

The time is short, and the gates are closing, but the way is still open to them to refuse to sell their American birthright for a mess of alien pottage.

To this end I move that this House of Delegates request the Board of Trustees, through the Council on Medical Service and Public Relations, to implement this warning at once by giving it the widest possible publicity through every available medium.

Report of Reference Committee on Medical Education

Dr. Fred M. Smith, Chairman, presented the following report, which was amended and then adopted as amended on motion of Dr. Smith, seconded and carried. The amended report as adopted reads:

Telegram on Deferment of Prospective Medical Students: The Reference Committee on Medical Education recommends that the House of Delegates of the American Medical Association approve the statement in the telegram sent to Dr. Olin West by Dr. Harvey Stone and Dr. Frank H. Lahey.

Your reference committee further recommends that this resolution be approved by the House of Delegates and copies of it be wired to all members of the Senate and House Committees on Military Affairs, the director of the Office of War Mobilization and Reconversion, the director of Selective Service, the chairman of the Procurement and Assignment Service, the Secretary of War, the Secretary of the Navy and the President of the United States, and that it be given the widest publicity in the press.

Respectfully submitted,

FRED M. SMITH, Chairman.
THOMAS S. CULLEN.
GEORGE W. KOSMAK.
LEON J. MENVILLE.
A. W. ADSON.

Report of Reference Committee on Industrial Health

Dr. William L. Estes Jr., Chairman, presented the following report, which on motions of Dr. Estes, duly seconded and carried, was adopted section by section and as a whole:

1. Report of Board of Trustees Dealing with Report of Council on Industrial Health: The magnificent report of the Council on Industrial Health has received detailed consideration by your reference committee. Its comprehensive coverage of industrial health activities indicates the wise direction and thorough understanding and foresighted vision of those responsible for the work of this council and full realization of the opportunities and obligations of the profession in this ever expanding field of medical endeavor. Your reference committee would particularly commend (1) its belief in the importance of the Council's role in the development and maintenance of satisfactory scientific and cultural relations with Canada and Latin America; (2) that in health activities in industry the physician should be directly responsible to top management and that activities relating to health in industry be centered in and directed through the medical department, and in that connection your reference committee would particularly advise that adequate supervision by the industrial physician be considered imperative.

Your reference committee concurs in the Council's opinion that public industrial hygiene activity should reside in bureaus operated by health departments and that the services performed by these bureaus, the Division of Industrial Hygiene of the U. S. Public Health Service and similar divisions of state and local health departments merit full support of the medical profession.

The formulation of a joint committee of the Council on Medical Education and Hospitals and the Council on Industrial Health seems particularly timely to survey the field of undergraduate teaching in the field of industrial medicine, to encourage refresher courses for physicians and to foster graduate teaching in industrial health to the end that a sound foundation may be laid for the possible eventual recognition of this division of medicine as a specialty.

Your reference committee particularly commends concern for and interest in the return of many disabled persons to profitable employment whereby physical capacity is matched with specific

occupational requirements. It is a matter of gratification that the Council feels one of its most significant contributions to the whole industrial health problem lies in continued study of the rehabilitation problem and the field of industrial health examination.

It is worthy of note that the Committee on Workmen's Compensation of the Council stands ready with dependable aid and guidance in workmen's compensation affairs for state medical associations.

The enlarging scope of the activities of the Council would seem to deserve generous consideration in the amplification of funds allocated to the Council in order to obtain adequate personnel and facilities for the important expansion program in contemplation particularly in field services.

In conclusion, the committee concurs heartily in the belief of the Council on Industrial Health that in no other field are there comparable opportunities to improve scientific medicine and the distribution of medical services and to awaken a real appreciation of the accomplishments of medicine on the part of a very large portion of the total population.

2. Resolutions on Opposition to H. R. 525 and S. 1271: Your reference committee approves these resolutions, recommends their adoption and further recommends that copies of them be sent through proper channels of the American Medical Association to the appropriate committees of Congress.

Respectfully submitted,

WILLIAM L. ESTES JR., Chairman.
OLIVER W. H. MITCHELL.
STANLEY H. OSBORN.
DWIGHT H. MURRAY.
JAMES Q. GRAVES.
JAMES P. KERBY.
BARNEY J. HEIN.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Carl R. Steinke, Chairman, presented the following report:

1. Proposed Amendments to By-Laws, Chapter XV: In order to make effective the recommendation of the Council on Scientific Assembly creating a Section on General Practice, which recommendation has received the approval of this House, the following amendments to the By-Laws are hereby proposed: Change Section 1 "Titles of Sections of Scientific Assembly," No. 1 to read "Internal Medicine" and change No. 17 to No. 18 and insert a new No. 17 to read "General Practice of Medicine."

Your Reference Committee on Amendments to the Constitution and By-Laws approves of this change in the By-Laws.

2. Supplementary Report of the Council on Scientific Assembly: Your reference committee recommends approval of this report which requests changes in the By-Laws, chapter XV, referring to the sections.

3. A Plan Whereby Medical Students of Approved Medical Schools Can Become Student Members of the American Medical Association: Your reference committee recommends approval of the report of the Board of Trustees in this matter.

4. Resolution on Admission of Medical Staff of Veterans Administration to Fellowship in Association: The resolutions proposing amendments to the Constitution and By-Laws referring to the granting of Fellowship to medical officers of the Veterans Administration, which were referred to the Board of Trustees last year, were given consideration by the Board and were referred by it to the Judicial Council, reported on to the Board of Trustees and by that body referred to the House of Delegates. Your reference committee recommends that in view of the impending reorganization of the Veterans Administration no new policy be adopted until that reorganization is complete.

5. Supplementary Report of Council on Medical Service and Public Relations Dealing with Fellowship: The report of the reference committee on this matter was submitted to the House.

Respectfully submitted,

CARL R. STEINKE, Chairman.
KARL S. J. HOEHL.
THOMAS A. FOSTER.
GEORGE P. JOHNSTON.
ROSS S. McELWEE.

The Vice Speaker took the chair.

The first, third and fourth sections of the report of the reference committee were adopted on motions of Dr. Steinke, seconded and carried after discussion. The second and fifth sections were rereferred to the reference committee.

The By-Laws were then amended in accordance with section 1 of the report of the reference committee on motion of Dr. Steinke, seconded and carried.

The Speaker resumed the chair.

Executive Session

The House went into Executive Session on motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded and carried.

The Sergeant-at-Arms cleared the House of all but those entitled to remain, and the Speaker declared the House in Executive Session.

Report of Reference Committee on Executive Session

Dr. Walter F. Donaldson, Chairman, presented the following report, which on motion of Dr. Donaldson, seconded and carried after discussion, was adopted:

Resolution on Council on Medical Service and Public Relations and Amendment: Your reference committee has reconsidered the original resolution and has considered the amendment to the original motion submitted to the House of Delegates.

The duties of the Council on Medical Service and Public Relations as outlined in the By-Laws have been reviewed. Your reference committee reviewed the manifold duties of this council as outlined on pages 165 to 180 in the Handbook.

Your reference committee feels that this council is already overwhelmed with work assigned to it that more properly belongs to other committees. Furthermore it believes that this council has done excellent work to date and is to be commended. It feels that the Board of Trustees should clarify the duties of this council. There is evidence that the Council will be assisted materially when the Bureau of Medical Economics is revived.

Your reference committee has been informed that provision has been made by the Board of Trustees to engage public relations counsel.

For the foregoing reasons your reference committee believes that it is unwise to add to the duties of the Council at this time. It further believes that, in the interest of harmony and at such a critical time in American medicine, this is a most inopportune time to consider such resolutions and amendments.

Your reference committee has complete confidence in the Board of Trustees to carry this matter to a successful conclusion. It feels therefore that, for the reasons outlined in the original report of the committee and those outlined here, the resolution and amendments should be disapproved.

Respectfully submitted,

WALTER F. DONALDSON, Chairman.
EDWARD JELKS.
JAMES R. McVAY.
WILLIAM R. BROOKSHIER.
THOMAS P. MURDOCK.
CLARK BAILEY.
ALLEN H. BUNCE.

Report of Reference Committee on Legislation and Public Relations

Dr. E. S. Hamilton, Chairman, presented the amended portion of the report of the reference committee on the message of President Truman, which was adopted on motion of Dr. Hamilton, seconded and carried. The report of the reference committee on the message of President Truman as amended and finally adopted reads:

Assigned to the Committee on Legislation and Public Relations was the message of President Harry Truman, submitting a national health program on November 19 and the latest version of the Wagner-Murray-Dingell bill submitted to the Senate and the House of Representatives the same day.

The President's program includes five features: The first is the proposal to grant federal aid for the building of hospitals and health centers throughout the nation. The Board of Trus-

tees of the American Medical Association has approved the principles of the Hill-Burton bill, and the committee recommends that the House of Delegates endorse this action of the Board as being within the program of constructive action toward improving the health of the American people.

The second recommendation of President Truman is for an extension of maternal and child health services. The Wagner-Murray-Dingell bill would make this effective by increased grants in aid through the Children's Bureau to the individual states. This constitutes an insidious attempt to turn over to the federal government functions that are definitely those of the medical profession. The American Medical Association has always favored proper aid for the extension of maternal and child health services where the need can be shown.

The third feature of the President's message dealt with the development of the National Research Foundation. The Committee on Postwar Medical Service, the Council on Medical Education and Hospitals and the Board of Trustees of the American Medical Association have approved the principles of the Magnuson bill, which would place the control of the National Research Foundation under a scientific board of directors rather than under an individual director to be appointed by the President. Your reference committee approves the action taken by those official bodies of the American Medical Association and urges that the House of Delegates support their recommendations.

Finally, the fourth proposal of President Truman and the main feature of the Wagner-Murray-Dingell bill is the creation of a federal system of compulsory sickness insurance. In commenting on this proposal, your reference committee recommends that the House of Delegates endorse the following statement from the editorial published in *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, Dec. 1, 1945: "No one will ever convince the physicians of the United States that the Wagner-Murray-Dingell bill is not socialized medicine. By this measure the medical profession and the sick whom they treat will be directly under political control. By this measure the great system of private hospitals and community hospitals that have grown up in our country will depend for their continued operation on funds paid to them by a federal government agency. By this measure the philanthropic efforts for the care of the sick, which have been the pride of our nation, will be forever deterred. Through this measure competent young men who would enter the medical profession will be forced to seek other fields of action still remaining under our democracy which still permit the exercise of individual initiative and freedom of thought and action. By this measure doctors in America would become clock watchers and slaves of a system. Now, if ever, those who believe in the American democracy must make their belief known to their representatives, so that the attempt to enslave medicine as first among the professions, industries and trades to be socialized will meet the ignominious defeat it deserves."

Your reference committee recommends that the House of Delegates express its official disapproval of section 4 of the Wagner-Murray-Dingell bill for the following reasons:

1. The Wagner-Murray-Dingell bill is founded on the false assumption that solution of the medical care problem for the American people is the panacea for all of the troubles of the needy.

2. This is the first step in a plan for general socialization not only of the medical profession but of all professions, industry, business and labor.

3. Positive proof exists from experience in other countries that inferior medical service results from compulsory health insurance.

4. A program such as outlined is enormously expensive. It will result in greatly increased taxes for the entire population of the United States.

5. Voluntary prepayment medical plans now in operation in many parts of the United States and which are rapidly increasing in number will accomplish all the objects of this bill with far less expense to the people and under these plans the public will receive the highest type of medical care.

On motion of Dr. Mather Pfeifferberger, Illinois, seconded by Dr. E. V. Askey, California, and carried, the House rose from Executive Session, and on motion of Dr. R. W. Fouts, Nebraska, seconded and carried, the House went into regular session.

Wednesday Morning—Continued

Introduction and Address of Dr. Thomas C. Routley

Dr. Roger I. Lee, President, introduced Dr. Thomas C. Routley, Toronto, Canada, Secretary of the Canadian Medical Association, who addressed the House as follows:

Mr. President, Mr. Speaker, and Members of the House of Delegates: I deem it a rare privilege from year to year to be permitted to attend your sessions and meet you and say a word to you. I began my autumn tour of Canada in September and traveled some ten or twelve thousand miles, returning to my office two or three days ago. When I received Olin West's very kind note reminding me that you were meeting this week, I couldn't resist the temptation to come. As a matter of fact, I don't see how you fellows got along for the last two days without this perennial visitor from Canada.

I can see from the discussions this morning that you have problems just as we do. In fact, it reminds me of a story. One of our Canadian boys was sight-seeing in London and as he was raised in the vernacular of modern youth his language was punctuated with plenty of slang. He was standing in front of a building looking up at it when an Englishman came along, and he said to the Englishman "Say, bo, what is that?"

He said "That is our crematorium."

"Cripes," he said, "is that where they make cheese?"

"No, no, no," said the Englishman, "That isn't where they make cheese." He said "Why don't you go in and have a look around? It is quite an interesting building."

So the boy went in and in less time than it takes to tell it he landed out again on the sidewalk on all fours. The Englishman, who hadn't moved, said "Well, my boy, what happened to you?"

"Cripes," he said, "I don't know what happened to me. I went in there and I saw a lot of sourpusses over in the corner looking pretty gloomy, so I went over and I said 'Well, boes, what's cooking?'"

Well, listening to our discussions and reading your morning's paper, as I said, I realized there is plenty a-cooking and we in medicine, both over here and in Canada, have need to be on our guard. While on my feet, I would ask if I may be permitted to say one or two things.

In the first place, we have just decided this week to hold our seventy-seventh annual meeting in Banff Springs Hotel in the mountains. Many of us know that glorious spot. We are meeting during the week of June 10, and I here and now on behalf of the Canadian Medical Association extend a hearty welcome to any and all of you and your colleagues who can find it convenient to visit us in Banff during the week of June 10. It is on your way to San Francisco, a glorious stop, and we will try to be as kind to you as you have always been to me and my colleagues when we come here.

There is one other thing that I would like to say if I may. The world has emerged from this war, thank God, but I am not sure that the war is entirely over. The shooting is over but the peace is far from being fully realized and we are not going to have a peaceful world unless the United Nations undertakes to make the peace stick. And, gentlemen, we are not going to have united nations unless we have united understanding and good will and cooperation, and the reason we have such marvelous good will and cooperation and understanding between your country and mine is the fact that we see each other. We meet each other. We know each other, and we love each other.

Now is it possible that in the great company of nations something like that can be achieved? It can be achieved only by bringing the people of the United Nations together. Therefore, we in Canada a few days ago proposed to our government

that the government of Canada invite the United Nations to convene its first medical congress of the United Nations in our country.

I would like to suggest, if I may, Mr. Speaker, without presumption, that perhaps this great body would feel disposed to support an invitation to the steering committee of the United Nations now sitting in London, suggesting that a medical conference of all the United Nations be convened some time in the next year on this side of the water. If you felt you could support the idea of their being convened at some convenient center in Canada, we of course would be delighted on our side to have that support.

I have no knowledge whatever that the United Nations Council would consider favorably such an invitation, but I have a feeling that, should that invitation be supported by American medicine to the fullest extent of the term, by your body and ourselves, perhaps the invitation might be favorably received.

Mr. Speaker, may I once again express to you my profound sense of happiness and satisfaction in being received by you as I have been so cordially for now twenty-three years. I trust that the relationship which exists between our two bodies will be a signpost to medicine throughout the world so that we here in medicine on this continent may do our share to make the United Nations united and to insure that peace will be here to stay.

On motion of Dr. R. E. Schlueter, Missouri, seconded by Dr. George W. Kosmak, New York, and carried, the request of Dr. Routley for the support of the American Medical Association in inviting a medical conference of all united nations to be convened some time next year in Canada was referred to the Board of Trustees with power to act.

Report of Reference Committee on Miscellaneous Business

Dr. James R. Reuling Jr., Chairman, presented the following report, which on motion of Dr. Reuling, duly seconded and carried, was adopted section by section:

1. Resolution on National Physicians' Committee. Your reference committee approves the resolution and moves its adoption by the House.

2. Resolution on Removal of Sex Discrimination from Medical Students: Your reference committee is in sympathy with the intent of the resolution. However, recognizing that the admission requirements of the various medical schools are entirely a matter for the trustees and the admissions committees of the various medical schools, it is recommended that the Secretary of the American Medical Association be requested to refer this resolution to the Association of American Medical Colleges without comment.

Respectfully submitted,

JAMES R. REULING JR., Chairman.
STEPHEN E. GAVIN.
HENRY A. LUCE.
L. W. LARSON.
WILLIAM BATES.

Dr. Reuling moved that the Resolutions on Minimum Wage Standard, which had been tabled yesterday, be taken from the table, and the motion was seconded and lost.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Thomas A. McGoldrick, Chairman, presented the following report, which on motions of Dr. McGoldrick, duly seconded and carried, was adopted section by section:

1. Resolution on Woman's Auxiliary: Your reference committee recommends that the House of Delegates approve this resolution.

2. Motion on Federal Control of Practice of Medicine: Your reference committee recommends that the House of Delegates approve this motion.

Proposed Amendment to the By-Laws, Chapter XII, Section 2

Dr. L. S. Goin, California, submitted the following proposed amendment to the By-Laws, chapter XII, section 2, which was

referred to the Reference Committee on Amendments to the Constitution and By-Laws:

Resolved, That section 2 of chapter XII of the By-Laws be amended by striking the words "and subscribe to THE JOURNAL," and further amend section 2, chapter XII, by inserting after the words "is disapproved by the Judicial Council (line 8, p. 30) a new sentence to read "Fellows shall receive THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION."

The House recessed for fifteen minutes, after which it was called to order by the Speaker, Dr. H. H. Shoulders.

Report of Reference Committee on Legislation and Public Relations

REPORT OF BUREAU OF LEGAL MEDICINE AND LEGISLATION TO BOARD OF TRUSTEES

1. Chemical Tests for Intoxication: The Board of Trustees approved in principle the draft, in form of an amendment of the Uniform Vehicle Code, a copy of which appears on page 69 of the Handbook. Your reference committee recommends similar approval by the House of Delegates.

2. Prescribing Narcotics by Telephone: Your reference committee concurs in the recommendation of the Board of Trustees that physicians restrict orders for narcotics by telephone to actual cases of emergency.

3. Industrial Health Under Jurisdiction of Labor Department (H. R. 525): A resolution covering this subject was introduced and referred to the Reference Committee on Industrial Health. Your reference committee presents no report.

4. Miller Bill to Establish a Federal Department of Health: A resolution also covering this subject was referred to another committee. Your reference committee presents no report.

5. Federal Licensure of Physicians: This matter is also covered in another resolution. Your reference committee presents no report.

6. The Wagner-Murray-Dingell Bill (S. 1050): This bill has been superseded by S. 1606, which is discussed in another part of the report of this reference committee.

7. Maternal and Child Welfare Act of 1945 (S. 1318): The detailed analysis of the provisions of this legislation was published in the Aug. 11, 1945 issue of THE JOURNAL. The bill would extend and greatly expand the E. M. I. C. program. It would make available to mothers and children medical care irrespective of financial needs. A "child" in contemplation of this legislation is any person under 21 years of age. Your reference committee recommends disapproval of the bill.

8. Committee to Study the Relationship of Medicine and the Law: Your reference committee approves the report of this committee.

9. Federal Programs to Promote Scientific Research: This matter is also considered in another resolution. Your reference committee presents no report.

10. Deferment of Premedical Students: A resolution covering this subject was referred to another committee. Your reference committee presents no report.

REPORT OF COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS

1. Section on Public Relations: Your reference committee desires to commend the splendid work that has been done during the past year. It desires to emphasize the importance of utilizing all dignified approaches to the public by which the public may have a clear knowledge of the work of organized medicine. Community health conferences have proved valuable in numerous sections of the country. The utilization of professional public relations counsels on a national, state and county level is approved:

2. Medical Care for the American People: Your reference committee has reviewed the article by Dr. Louis H. Bauer published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Dec. 1, 1945. It commends the excellent manner in which the program of the physicians represented by the American Medical Association dealing with the extension of improved health and medical care to all the people is presented. It recommends that the article be generally read by the profession.

Your reference committee stresses especially section 1 of the program dealing with sustained production leading to better living conditions, improved housing, nutrition and sanitation which are fundamental to good health; section 4, dealing with the development in or extension of voluntary sickness insurance plans; section 7, dealing with federal aid to states where definite need is demonstrated, administered on a state basis with the help and advice of the medical profession; section 10, dealing with discharge of physicians from the armed forces as rapidly as is consistent with the war effort; section 12, dealing with adoption of federal legislation to provide for adjustments in draft regulations which will permit students to prepare for and continue the study of medicine, and section 12, dealing with postponement of consideration of revolutionary changes while such a large number of medical men are in the service and while such a large number of men and women are in uniform. The Vice Speaker took the chair.

3. *Published and Interim Reports of the Council:* Your reference committee has carefully reviewed these reports. Much praise should be given this council for its earnestness and zeal in facing a most difficult assignment. It believes that the news letter and special bulletins issued have been of great value in arousing and maintaining interest in the various component societies. The studies already made in the field of voluntary insurance will be increasingly valuable.

The recommendation on service fellowships is heartily approved.

The establishment of the Washington office is a distinctly forward step, and its published report should be carefully read by every member of the profession.

The several regional conferences conducted by the Council as well as the many addresses delivered by individual members of the Council deserve great praise.

The Council is to be congratulated on the employment of Mr. Cooley and the highly competent advisory and consulting committees.

In its supplementary report the Council again calls attention to its studies on the status of medical students, with the recommendation that the House of Delegates request state and county medical societies to implement methods as early as possible for the admission of medical students to county societies in order that they may be inculcated with the ideals and ethics of medicine. This recommendation is approved.

The Council calls attention in the supplementary report to the fact that it has held numerous conferences with the American Cancer Society, in which meetings recommendations were made as to changes in certain of its rules and objectives. The Council recommends that the House of Delegates approve the following standards taken from these resolutions: (a) Definition: A cancer detection, cancer prevention, well person clinic is designed to detect abnormalities not producing symptoms sufficient to send the patient to the doctor. These clinics do not diagnose or treat diseases; (b) no such clinics shall be established in any community without the approval of the county medical society.

Your reference committee recommends approval of this recommendation.

REPORT OF COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS ON VOLUNTARY PREPAYMENT MEDICAL CARE PLANS, RESOLUTION ON DEVELOPMENT OF SPECIFIC NATIONAL HEALTH PROGRAM AND RESOLUTIONS ON EXPANSION OF MEDICALLY SPONSORED VOLUNTARY GROUP HEALTH CARE PROGRAMS

Your reference committee has reviewed several resolutions calling for the adoption of voluntary prepayment medical care plans. All of these plans show a uniformity of desire for the immediate setting up of a national plan on a voluntary basis. In all of them the urgency of this being done is stressed. Accordingly your reference committee recommends that the House of Delegates of the American Medical Association instruct the Board of Trustees and the Council on Medical Service and Public Relations to proceed as promptly as possible with the development of a specific national health program, with emphasis on the nationwide organization of locally administered prepayment medical plans sponsored by medical societies.

The Speaker resumed the chair

RESOLUTIONS ON CHANGE OF SYSTEM OF MEDICAL CARE

Your reference committee has already gone on record as favoring the article by Dr. Louis H. Bauer in *THE JOURNAL*, December 1, page 945, and it recommends at this time that this resolution be approved.

RESOLUTION ON PERMANENT CONFERENCE ON MEDICAL CARE

Your reference committee feels that it is unnecessary to take any action at this time and respectfully refers the resolution to the Board of Trustees and to the Council on Medical Service and Public Relations for consideration and attention.

RESOLUTIONS ON WILLINGNESS TO COOPERATE IN NATIONAL CONFERENCE OF LABOR

Your reference committee is informed that this attempt has been previously made by both the Board of Trustees and the Council on Medical Service and Public Relations with little success. It accordingly returns this to them for any further action that they deem necessary.

H. R. 4717

Your reference committee believes that this resolution was prepared and presented before the House had the opportunity of hearing the brilliant address by Major General Hawley, and that, in view of the pronouncements made by Major General Hawley, no action at this time is necessary.

REPORT OF COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS ON LEGISLATION

Your reference committee is heartily in accord with the sentiment expressed in this report.

MIDWINTER SESSION OF HOUSE OF DELEGATES

Dr. Hamilton asked if any report had been submitted regarding the suggestion of the President for midwinter meetings of the House in addition to the annual session and was advised that no such report had as yet been submitted.

Dr. Hamilton then reported that the Board of Trustees suggested that, if two meetings of the House should be held each year, that would undoubtedly obviate the necessity for any action regarding the delegating of powers of the House of Delegates to the Board of Trustees.

Your reference committee approves this in principle and recommends that the proper By-Law for two meetings a year of the House of Delegates be prepared for introduction and consideration by the House of Delegates at its next meeting, July 1946.

RESOLUTIONS ON LICENSURE OF HONORABLY DISCHARGED MEDICAL OFFICERS WITHOUT EXAMINATION AND RESOLUTION ON OPPOSITION TO H. R. 2969

Your reference committee is strongly of the opinion that licensing of physicians is a state right and as such it does not come within the province of the House of Delegates of the American Medical Association to make any such recommendations to the state legislature. Your reference committee recommends disapproval of the Resolutions on Licensure of Honorably Discharged Medical Officers Without Examination and approval of the Resolution on Opposition to H. R. 2969.

Respectfully submitted,

E. S. HAMILTON, Chairman.
JOHN J. MASTERSON.
EDWARD L. BORTZ.
RAYMOND L. ZECH.
LLOYD NOLAND.

Dr. Hamilton moved adoption of each section of the report of the reference committee dealing with the Report of the Board of Trustees on the Bureau of Legal Medicine and Legislation, and each motion was duly seconded and carried after discussion.

On motions of Dr. Hamilton, seconded and carried after discussion, the report of the reference committee referring to the Report of the Council on Medical Service and Public Relations was adopted section by section

It was moved by Dr. Hamilton that the report of the reference committee concerning resolutions dealing with voluntary prepayment medical care plans be adopted. The motion was seconded by several and carried.

On motion of Dr. Hamilton, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried, the report of the reference committee, referring to Resolutions on Change of System of Medical Care was adopted.

Dr. Hamilton moved that the section of the report of the reference committee concerning the Resolution on Permanent Conference on Medical Care be adopted. The motion was seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried.

It was moved by Dr. Hamilton, seconded by Dr. Charles H. Phifer, Illinois, and carried that the portion of the report of the reference committee dealing with Resolutions on Willingness to Cooperate in National Conference of Labor be adopted.

Dr. Hamilton moved, and the motion was seconded and carried, that the section of the report of the reference committee with respect to H. R. 4717 be adopted.

On motion of Dr. Hamilton, seconded and carried, the part of the report of the reference committee pertaining to the report of the Council on Medical Service and Public Relations on Legislation was adopted.

Dr. Hamilton moved that the report of the reference committee on Midwinter Session of House of Delegates be adopted. The motion was seconded and carried.

The Speaker declared it unnecessary to amend the By-Laws as suggested by Dr. Hamilton to provide for two sessions of the House of Delegates because interim sessions can now be called by the Speaker on written request of twenty-five or more of the delegates representing one third or more of the constituent associations or on request of a majority of the Board of Trustees.

Dr. Hamilton moved, and the motion was seconded by Dr. Charles H. Phifer, Illinois, and carried after discussion, that the report of the reference committee dealing with resolutions on licensure of honorably discharged medical officers and the resolution on opposition to H. R. 2969 be approved.

Report of the Reference Committee on Rules and Order of Business

Dr. Francis F. Borzell, Chairman, presented the following report:

In view of the fact that the business of the House is not yet completed, and also in view of the fact that this House moved yesterday to have the election at 2 o'clock this afternoon, I move that the business of the morning be suspended temporarily; that we reconvene at 2 o'clock; that at the conclusion of the election this afternoon we consider again the order of business of this morning that has not yet been completed, and that then, if necessary, the House continue on into the evening. I have been told that this room will be available so that we may then complete our business today.

That means that this afternoon's session would constitute the last session of the House of Delegates, and your attention is called by the Reference Committee on Rules and Order of Business to a provision in the By-Laws which provides that new business to be presented at the last session requires unanimous consent for introduction and all such business so presented requires three-fourths affirmative vote for adoption. The business of the House, therefore, would be expedited in the last session.

Dr. Mather Pfeifferberger, Illinois, moved that the House recess for luncheon.

The motion was seconded, was put to a vote, and was carried, and the meeting recessed at 1 o'clock.

Wednesday Afternoon, December 5

The House of Delegates was called to order at 2:10 p. m. by the Speaker, Dr. H. H. Shoulders.

Report of Reference Committee on Credentials

Dr. G. Henry Mundt, Chairman, announced that 170 delegates had registered for this session of the House.

Roll Call

Dr. Olin West, Secretary, called the roll.

Presentation of Minutes

On motion of Dr. William R. Brooksher, Arkansas, seconded and carried, the House dispensed with the reading of the minutes.

Resignation of the Speaker, Dr. H. H. Shoulders

Dr. H. H. Shoulders, Speaker, offered his resignation as Speaker of the House of Delegates. It was moved by Dr. James R. Reuling Jr., New York, seconded by Dr. George W. Kosmak, New York, and carried after amendment, that the resignation be accepted with regret and with due appreciation of services to this House.

ELECTION OF OFFICERS

The Speaker declared the next order of business to be the election of officers.

Election of President-Elect

The Vice Speaker assumed the Chair and called for nominations for President-Elect.

Dr. A. R. McComas, Missouri, nominated Dr. Alphonse McMahon, St. Louis, and the nomination was seconded by Drs. Robert E. Schlueter, Missouri; Clark Bailey, Kentucky, and Thomas A. McGoldrick, New York.

Dr. H. B. Everett, Tennessee, nominated Dr. H. H. Shoulders, Nashville, Tenn., and the nomination was seconded by Drs. Stephen E. Gavin, Wisconsin; Louis A. Buie, section on Gastro-Enterology and Proctology; Olin H. Weaver, Georgia; Francis F. Borzell, Pennsylvania; Robert H. Hayes, Illinois; Floyd S. Winslow, New York, and Thomas A. Foster, Maine; the delegation from New Jersey, and Drs. Emily D. Barringer, New York; William R. Brooksher, Arkansas; James Q. Graves, Louisiana, and Lloyd Noland, Alabama.

Dr. Barney J. Hein, Ohio, nominated Dr. E. J. McCormick, Toledo, Ohio, and the nomination was seconded by the delegation from Connecticut.

Dr. Arthur J. Bedell, Section on Ophthalmology, moved that the nominations be closed, and the motion was seconded by Dr. E. G. Wood, Tennessee, and carried.

Dr. Olin West, Secretary, announced that 150 delegates had answered the roll call. Three additional delegates reported in attendance.

The Tellers spread the ballot and the Secretary announced that 153 delegates had reported present and 149 votes had been cast, of which Dr. McMahon had received 21, Dr. Shoulders 77 and Dr. McCormick 51.

The Vice Speaker declared Dr. H. H. Shoulders, Nashville, Tenn., having received the majority of the votes cast, elected President-Elect.

Dr. A. R. McComas, Missouri, moved that Dr. Shoulders be declared elected unanimously, and the motion was seconded and carried.

The Vice Speaker appointed Dr. James R. Reuling Jr., New York, and Dr. H. B. Everett, Tennessee, to escort the newly elected President-Elect, Dr. H. H. Shoulders, to the platform.

Election of Vice President

Dr. Charles H. Phifer, Illinois, nominated for Vice President Dr. E. S. Hamilton, Kankakee, Ill., and the motion was seconded by Dr. Thomas F. Thornton, Iowa. Dr. A. A. Walker, Alabama, stated that since Dr. Hamilton was a member of the House of Delegates he was not eligible for election as Vice President according to the By-Laws, and the Vice Speaker read that section of the By-Laws, after which Dr. Phifer withdrew his nomination of Dr. Hamilton.

Address of President-Elect

Dr. H. H. Shoulders, President-Elect, was escorted to the platform and addressed the House as follows:

Some years ago I served with you as a member of this House of Delegates. Then I developed a respect for the members

of this House, as well as a profound regard for the heavy duties you performed. You later elevated me to Speaker in the House, and my respect for you and your responsibility has grown with the years.

Today I do not know how to express to you my profound sense of gratitude for the honor you have conferred on me, but I will say this: So help me God, I will endeavor to fulfil the office so as not to embarrass you.

I thank you.

Election of Vice President

Dr. A. A. Walker, Alabama, nominated Dr. W. R. Molony, Los Angeles, and the nomination was supported by several. Dr. Mather Pfeifferberger, Illinois, moved that the nominations be closed and that the ballot be cast for Dr. Molony. The motion was seconded by several and carried.

Dr. Olin West, Secretary, cast the vote of the House for Dr. W. R. Molony, Los Angeles, for Vice President for the ensuing year, and the Vice Speaker declared Dr. Molony so elected.

Election of Secretary

Dr. A. A. Walker, Alabama, nominated Dr. Olin West as Secretary to succeed himself, and the motion was seconded by several. Dr. James R. Reuling Jr., New York, moved that the nominations be closed and a rising vote be taken, and the motion was seconded by several and carried.

The rising vote was unanimous and the Vice Speaker declared Dr. Olin West elected Secretary of the American Medical Association for the ensuing year to succeed himself.

It was moved by Dr. Stanley H. Osborn, Section on Preventive and Industrial Medicine and Public Health, that the vote be by one ballot to conform to the legal requirements, and the motion was seconded and carried.

Dr. R. W. Fouts, Vice Speaker, took great pleasure in casting the ballot of the House for Dr. Olin West as Secretary of the American Medical Association for the ensuing year and declared Dr. West so elected.

Election of Treasurer

Dr. James R. Bloss, Chairman, Board of Trustees, reported as follows: The Board would like to submit the name of Dr. Josiah J. Moore, Chicago, to succeed himself as Treasurer of the Association.

On motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded and carried, the nomination of Dr. Moore was supported.

Dr. Olin West, Secretary, cast the vote of the House for Dr. Josiah J. Moore as Treasurer of the American Medical Association for the ensuing year and the Vice Speaker declared Dr. Moore so elected.

Election of Speaker of House of Delegates

The Vice Speaker requested the President, Dr. Roger I. Lee, to take the chair.

Dr. Karl S. J. Hohlen, Nebraska, nominated Dr. R. W. Fouts, Omaha, as Speaker of the House of Delegates, and the nomination was seconded by several, after which it was moved, seconded and carried that the nominations be closed.

On motion of Dr. Mather Pfeifferberger, Illinois, seconded and carried, Dr. Olin West, Secretary, cast the vote of the House for Dr. R. W. Fouts, Omaha, as Speaker of the House of Delegates of the American Medical Association for the ensuing year, and the Acting Speaker, Dr. Roger I. Lee, declared Dr. Fouts so elected.

Dr. R. W. Fouts, Speaker, resumed the chair.

Election of Vice Speaker of House of Delegates

Dr. Walter F. Donaldson, Pennsylvania, nominated Dr. Francis F. Borzell, Philadelphia, as Vice Speaker of the House of Delegates, and the nomination was supported by several.

It was moved by Dr. Arthur J. Bedell, Section on Ophthalmology, that the nominations be closed. The motion was seconded and carried after the nomination of Dr. James R. Reuling Jr., Bayside, N. Y., by Dr. Floyd S. Winslow, New York.

Dr. Reuling requested the privilege of withdrawing his name from nomination and moved that one unanimous vote be cast for Dr. Borzell. The motion was seconded and carried.

Dr. R. W. Fouts, Speaker, cast the ballot of the House for Dr. Francis F. Borzell, Philadelphia, as Vice Speaker of the House of Delegates of the American Medical Association for the ensuing year and declared Dr. Borzell so elected.

Election of Trustees

ELECTION OF TRUSTEE TO SUCCEED

DR. RALPH A. FENTON

Dr. James M. Flynn, New York, nominated Dr. John H. Fitzgibbon, Portland, Ore., as Trustee to succeed Dr. Ralph A. Fenton, Portland, Ore., whose term as Trustee expires this year and who is not eligible for reelection. The nomination was supported by several.

On motion of Dr. A. A. Walker, Alabama, seconded and carried, the nominations were closed and the Secretary was instructed to cast the vote of the House for Dr. Fitzgibbon.

Dr. Olin West, Secretary, cast the ballot of the House for Dr. John H. Fitzgibbon, Portland, Ore., to serve as Trustee of the American Medical Association for a term of five years, and the Speaker declared Dr. Fitzgibbon so elected.

ELECTION OF TRUSTEE TO SUCCEED DR. JAMES R. BLOSS

Dr. J. Morrison Hutcheson, Virginia, nominated Dr. Walter B. Martin, Norfolk, Va., as Trustee to succeed Dr. James R. Bloss, Huntington, W. Va., whose term expires this year and who is not eligible for reelection.

Dr. Walter G. Phippen, Massachusetts, nominated Dr. James A. Miller, Hartford, Conn., and the nominations of Dr. Martin and Dr. Miller were seconded by several.

Dr. Mather Pfeifferberger, Illinois, moved that the nominations be closed, and the motion was seconded and carried.

The tellers spread the ballot and Dr. Olin West, Secretary, announced that 146 votes had been cast, of which Dr. Martin received 47 and Dr. Miller 99, and the Speaker declared Dr. James R. Miller, having received the majority of the votes cast, elected Trustee to succeed Dr. James R. Bloss for a term of five years.

ELECTION OF TRUSTEE TO COMPLETE THE UNEXPIRED TERM OF DR. EDWARD M. PALLETTE, DECEASED

Dr. Louis A. Buie, Section on Gastro-Enterology and Proctology, nominated Dr. Robert A. Peers, Colfax, Calif., to succeed himself serving in place of Dr. Edward M. Pallette, deceased.

Dr. L. S. Goin, California, nominated Dr. Dwight H. Murray, Napa, Calif., and the nomination was seconded by several.

Dr. E. H. Cary, Texas, nominated Dr. Stanley J. Seeger, Texarkana, Texas, and the nomination was seconded by Dr. James C. Sargent, Wisconsin.

It was moved, seconded and carried that the nominations be closed and the Tellers spread the ballot.

Dr. Olin West, Secretary, announced that 142 votes had been cast, of which Dr. Peers received 34, Dr. Murray 70 and Dr. Seeger 38. The Speaker declared that the name of Dr. Peers, having received the least votes, would be removed from the ballot, and the Tellers spread a second ballot.

Dr. Olin West, Secretary, stated that 126 votes were cast, of which 95 were for Dr. Murray and 41 for Dr. Seeger, and the Speaker declared Dr. Dwight H. Murray, Napa, Calif., elected Trustee to fill the unexpired term ending in 1947 of Dr. Edward M. Pallette, deceased.

On motion of Dr. Cary, seconded and carried, the election of Dr. Murray was made unanimous.

Nominations for Standing Committees

NOMINATIONS BY PRESIDENT ROGER I. LEE

Dr. Roger I. Lee, President, presented the following nominations:

1. Member of Judicial Council: Dr. Louis A. Buie, Rochester, Minn., to succeed Dr. George Edward Follansbee, deceased.

2. Member of Council on Scientific Assembly: Dr. Henry R. Viets, Boston, to succeed Dr. A. A. Walker, Birmingham, Ala.

The nomination of Dr. Buie was confirmed on motion of Dr. Walter E. Vest, West Virginia, duly seconded and carried.

On motion of Dr. A. A. Walker, Alabama, seconded and carried, the nomination of Dr. Viets was approved.

NOMINATIONS BY BOARD OF TRUSTEES

Dr. James R. Bloss, Chairman of the Board of Trustees, presented the following report:

Council on Medical Education and Hospitals: In accordance with the usual custom of submitting more than one name to the House of Delegates for each vacancy on the Council on Medical Education and Hospitals, the Board submits the following nominations for the vacancy created by the expiration of the term of Dr. Weiskotten:

Dr. H. G. Weiskotten, Syracuse, N. Y.

Dr. Wilburt C. Davison, Durham, N. C.

The Tellers spread the ballot, and the Secretary announced that 121 votes had been cast, of which Dr. Weiskotten received 75 and Dr. Davison 46.

The Speaker declared Dr. Herman G. Weiskotten, Syracuse, N. Y., elected to succeed himself as a member of the Council on Medical Education and Hospitals for a term ending in 1952.

Council on Medical Service and Public Relations: The Board wishes to submit the following nominations for the two vacancies on the Council on Medical Service and Public Relations:

For the vacancy caused by the expiration of the term of Dr. Adson: Dr. A. W. Adson, Rochester, Minn.; Dr. Edwin S. Hamilton, Kankakee, Ill., and Dr. Thomas F. Thornton, Waterloo, Iowa.

For the vacancy caused by the resignation of Dr. Leathers: Dr. William R. Brooksher, Fort Smith, Ark., who was elected by the Board to serve until this meeting of the House; Dr. Wingate Johnson, Winston-Salem, N. C., and Dr. Walter B. Martin, Norfolk, Va.

Dr. Bloss stated that he was authorized to present the resignation of Dr. John H. Fitzgibbon, Portland, Ore., who had been elected a Trustee. On motion, seconded and carried, the resignation was accepted.

Dr. Bloss then submitted the following nominations for a member of the Council on Medical Service and Public Relations to succeed Dr. Fitzgibbon: Dr. James P. Kerby, Salt Lake City; Dr. E. N. Roberts, Pocatello, Idaho, and Dr. Raymond L. Zech, Seattle.

Dr. E. S. Hamilton and Dr. Thomas F. Thornton withdrew their names, since they wished Dr. Adson to be retained as a member of the Council on Medical Service and Public Relations.

On motion, seconded and carried, Dr. A. W. Adson, Rochester, Minn., was elected for a term of three years to succeed himself, and the Speaker declared Dr. Adson so elected.

The Tellers spread the ballot for the election of a member of the Council on Medical Service and Public Relations to succeed Dr. W. S. Leathers, resigned. The Secretary announced that 103 votes had been cast, of which Dr. Brooksher received 46, Dr. Johnson 19 and Dr. Martin 38.

A second ballot was spread by the Tellers, with the omission of the name of Dr. Johnson, who had received the lowest number of votes cast, and the Secretary announced that 103 votes had been cast, of which Dr. Brooksher received 47 and Dr. Martin 56, and the Speaker declared Dr. Walter B. Martin, Norfolk, Va., elected a member of the Council on Medical Service and Public Relations for a term of three years to succeed Dr. Leathers.

The Tellers spread the ballot for the election of a member of the Council on Medical Service and Public Relations to succeed Dr. John H. Fitzgibbon, resigned.

The Secretary announced that 102 votes had been cast, of which Dr. Kerby received 23, Dr. Roberts 18 and Dr. Zech 61.

The Speaker declared Dr. Raymond L. Zech, Seattle, having received a majority of the votes cast, elected a member of the Council on Medical Service and Public Relations to succeed Dr. John H. Fitzgibbon, resigned, for a term ending in 1947.

Election of Affiliate and Associate Fellows

NOMINATIONS FOR AFFILIATE FELLOWSHIP APPROVED BY THE COUNCIL ON SCIENTIFIC ASSEMBLY

Dr. Olin West, Secretary, presented nominations for Affiliate Fellowship as follows, which were confirmed on motion of Dr. E. S. Hamilton, Illinois, seconded and carried:

Allen, William G., Evanston, Ill.	Kellogg, Ernest C. (nomination from California), Cove., Ore.
Armstrong, John H., Kirkwood, Mo.	Kleinman, Morris, New York.
Ayres, George T. (nomination from Minnesota), Phoenix, Ariz.	Koch, Otto W., St. Louis.
Bacon, L. C., Sr., St. Paul.	Leverich, Leslie (nomination from Kansas), Dallas, Texas.
Beatty, J. David, Los Angeles	Livermore, W. H., Chickasha, Okla.
Becker, W. H., St. Louis.	MacLennan, Angus D., Boston.
Bliss, Guy L., Long Beach, Calif.	McBratney, E. W., St. Louis.
Bogart, Arthur H., Brooklyn.	Otis, Newton M. (nomination from California), El Paso, Ill.
Bonner, Adolph, Brooklyn.	Parowski, S. W., Chicago.
Bullitt, James B., San Jose, Calif.	Peet, Edward W., New York.
Carpenter, H. L., Richmond, Calif.	Roberts, William H., LaJolla, Calif.
Carson, George R., San Francisco.	Rudderow, Edward D., New York.
Clark, J. Bayard, New York.	Sewall, Edward C., Stanford University, Calif.
Denny, R. B., Creve Coeur, Mo.	Shaw, Perry H., Binghamton, N. Y.
Drummond, Winslow, Philadelphia.	Slemmons, J. Morris, Los Angeles.
Dudley, Carl E., St. Louis.	Trach, John M., Fairmont, W. Va.
Dunkley, J. H., Roanoke, Va.	Tupper, Virgil L., Bay City, Mich.
Fabricius, J. R. (nomination from New York), Pittsburgh	Vander Veer, E. A., Albany, N. Y.
Goddard, Walter W. (nomination from New York), Miami, Fla.	Vischer, L. G., Los Angeles.
Grad, Herman, Star Lake, N. Y.	Wiggers, A. F. A., Flushing, L. I.
Graham, H. B., San Francisco.	Wilcox, Homer B., Kingston, Pa.
Hoenes, A. J., Salt Lake City.	Williamson, N. E., Los Altos, Calif.
Holland, C. L., Fairmount, W. Va.	
Hooker, Ransom S. (nomination from New York), Charleston, S. C.	

NOMINATIONS FOR ASSOCIATE FELLOWSHIP

Dr. Olin West, Secretary, presented the following nominations for Associate Fellowship approved by the Judicial Council or by the executive committees of the Sections indicated, which were confirmed on motions, seconded and carried:

JUDICIAL COUNCIL

Kaufman, Lillie S., Dhamtari, Central Province, India.
Myer, Everett B., Castener, P. R.

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

Stefan Ansbacher, Richmond Hill, N. Y.
Herbert Silvette, Charlottesville, Va.
van Dyke, Harry B., New York.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Seiberlich, Joseph, Durham, N. H.

Place of 1948 Annual Session

Dr. James R. Bloss, Chairman of the Board of Trustees, reported that an invitation to the Association, dated April 1945 to meet in St. Louis in 1948 has been received from the county and state medical societies as well as from the convention and publicity bureau. This is the only invitation received for 1948 as yet, at least it is the only one that has come to the attention of the Board.

Dr. Robert E. Schlueter, Missouri, extended an invitation from the Missouri State Medical Association and the St. Louis Medical Society and from the people of the city of St. Louis to convene in that city in the year 1948.

It was moved by Dr. George W. Kosmak, New York, seconded and carried, that the invitation to meet in St. Louis in 1948 be accepted with thanks.

Appointment of Members of Committee on Centennial Celebration

The Speaker announced the appointment of Members of the Committee on Centennial Celebration to Cooperate with the Board of Trustees, as follows: Dr. E. R. Cunniffe, New York, Chairman; Dr. Walter F. Donaldson, Pittsburgh; Dr. Thomas P. Murdoch, Meriden, Conn.; Dr. Thomas S. Cullen, Baltimore, and Dr. Warren F. Draper, of the U. S. Public Health Service.

Appointment of Members of Committee on Distinguished Service Award

The Speaker announced the appointment of the following members of the Committee on Distinguished Service Award to

succeed the two members whose terms expire at the present time: Dr. A. A. Walker, Birmingham, Ala., Chairman, and Dr. George H. Curfman, Denver.

Report of Reference Committee on Legislation and Public Relations

Dr. E. S. Hamilton, Chairman, presented the following report, which is presented as amended:

1. Resolution on Survey of Medical Societies in Metropolitan Centers re Qualifications of Their Physicians: Your reference committee is of the opinion that this is a purely local problem and should be handled by the local medical society.

2. Report of Committee on Rural Medical Service: The report of the Committee on Rural Medical Service, which was referred to your reference committee, was carefully reviewed. Your reference committee commends the Committee on Rural Medical Service for its work and recommends that members of that committee amplify and continue their work with the appointment of necessary state committees.

3. Supplementary Report of the Council on Medical Service and Public Relations Dealing with the Extension of the Emergency Maternal and Infant Care Program, Postwar: Your reference committee is strongly in favor of the passage of this resolution. It has already gone on record as being opposed to the Pepper bill, which is the basis of this report. It recommends the approval of this resolution.

4. Supplementary Report of Council on Medical Service and Public Relations Dealing with Resolutions on Modern Medical Public Relations: Your reference committee recommends the adoption of this report:

5. Supplementary Report of Council on Medical Service and Public Relations on Resolutions on Formation of a National Health Congress: Your reference committee recommends the adoption of these resolutions.

6. Supplementary Report of Council on Medical Service and Public Relations with Respect to Health Legislation Beneficial to the People: In view of the importance and magnitude of the report, your reference committee recommends that it be referred to the Board of Trustees and to the Council on Medical Service and Public Relations for study and report at the next meeting of the House of Delegates.

7. Supplementary Report of Board of Trustees Referring to Animal Experimentation: Your reference committee recommends the adoption of this report and further recommends that the Board of Trustees be instructed to prepare for widespread dissemination an illustrated booklet outlining the benefits to animals and mankind of animal experimentation. An effort should be made to cooperate with the national movement on this subject when it has introduced its plans in order to avoid duplication.

Respectfully submitted,

E. S. HAMILTON, Chairman.
JOHN J. MASTERSON.
EDWARD L. BORTZ.
RAYMOND L. ZECH.
LLOYD NOLAND.

On motion of Dr. Hamilton, duly seconded and carried, after discussion, the first six sections of the report of the reference committee were adopted.

The seventh section of the report as amended was adopted on motion of Dr. Hamilton, seconded and carried.

On motion of Dr. Hamilton, seconded by several and carried, the report of the reference committee as amended was adopted as a whole.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Carl R. Steinke, Chairman, presented the following report:

1. Report of Council on Medical Service and Public Relations Dealing with Membership and Fellowship: The Council recommends that the necessary changes in the By-Laws be prepared for submission to the House of Delegates to provide that any Fellow entering the armed forces retain his Fellowship and that all those who have been dropped as Fellows be reinstated and kept on the list of Fellows until the end of the war or six months after the termination of their military service. Such

Fellows, of course, would not be entitled to receive any of the journals unless they subscribed, but their status as Fellows would be protected.

The recommendation to remit Fellowship dues so that Fellowship would be protected in the medical forces was introduced in the House of Delegates at the 1943 session. At that time the matter was disapproved by the reference committee and its decision supported by the House of Delegates. The reason for this action was that the dues of Fellowship were so small that any one wishing to remain a Fellow could easily afford to pay that amount. As a great majority, if not all, of the component societies remit the dues of their members in service, practically all men remain members of the American Medical Association.

If any member loses his Fellowship because of failure to retain his affiliation with his county society, he cannot be carried as a Fellow. The first requirement in the qualifications necessary for Fellowship is that he be a member of the American Medical Association in good standing.

Fellows of the Association who stayed with the armed forces during World War II, whose Fellowship was permitted to lapse during their time of military service, may be restored to Fellowship on payment of Fellowship dues for the year during which their restoration to Fellowship is effected.

2. Supplementary Report of Council on Scientific Assembly Recommending Changes in Chapter XV of the By-Laws Dealing with the Scientific Sections: Your reference committee recommends approval of the following changes in the By-Laws:

Change the word "thirty-five" in the fourth line of section 10, chapter XV, to the word "sixty," so that the first four lines of section 10, chapter XV, will read:

"Sec. 10. TIME AT WHICH TITLES MUST BE IN.—Titles of papers to be presented to the section must be in the hands of the secretary of the section at least sixty days before the first day of the"

Change section 15 of chapter XV of the By-Laws to be section 16 and insert as new section 15 the following:

"Sec. 15. PRESENTATION OF RESOLUTIONS.—No resolution shall be presented before any section later than the regular Executive Session on the second day of the section meeting at which time the officers are elected.

Respectfully submitted,

CARL R. STEINKE, Chairman.
K. S. J. HOHLEN.
GEORGE P. JOHNSTON.
ROSS S. McELWEE.
THOMAS A. FOSTER.

3. Resolution Suggesting Amendment to By-Laws, Chapter XII, Section 2: Your reference committee is informed that this must lie over until next year, since it was not introduced until today.

On motion of Dr. Steinke, seconded and carried, the first two sections of the report of the reference committee were adopted, and on motion, seconded and carried, the By-Laws were amended as suggested in the second section of the report of the reference committee just approved.

The Speaker announced that the amendment referred to in the third section of the report of the reference committee could not be acted on this year.

On motion of Dr. Steinke, seconded and carried, the report of the reference committee was adopted as a whole.

Unfinished Business

Annual Session in San Francisco in 1946: Dr. John W. Cline, California, extended a cordial invitation to attend the San Francisco session in 1946.

Proposed Amendment to Constitution: Dr. Henry A. Luce, Michigan, with unanimous consent of the House, presented the following amendment to the Constitution, which must lie over for action until next year: Amend section 3, article 5, of the Constitution by substituting the figure "176" for the figure "175" in the second line of this section, so that the first sentence of section 3, article 5, will read: "The total voting membership of the House of Delegates shall not exceed 176."

On motion, seconded and carried, the House adjourned at 5:30 p. m. to meet in San Francisco July 1, 1946.

Washington Letter

(From a Special Correspondent)

Dec. 17, 1945.

Construction of Twenty-Nine Additional Veterans' Hospitals Approved

Construction of twenty-nine new Veterans Administration hospitals and one veterans' home and transfer to the agency of seven surplus army hospitals has been authorized by President Truman. Five of the army hospitals will be for temporary use. The program announced by the President will give the agency 13,422 more beds, in addition to the 15,726 beds authorized under construction sanctioned last October. Coincidentally General Omar Bradley, veterans administrator, announced that Winter General Hospital at Topeka, Kan., acquired by the Army, will become a center for neuropsychiatric training under Dr. Karl A. Menninger, psychiatrist and brother of Brig. Gen. William C. Menninger, chief of the Army psychiatric division. The new veterans' hospitals will be built near major medical centers: Columbia University College of Physicians and Surgeons, University of Alabama School of Medicine, University of Arkansas School of Medicine, University of Michigan Medical School, Washington University School of Medicine outside St. Louis, Cornell University Medical College, Syracuse University College of Medicine, Duke University School of Medicine, University of Pennsylvania School of Medicine, Temple University School of Medicine, Jefferson Medical College of Philadelphia and the medical center at Charlotte, N. C. Major Gen. Paul Hawley, medical director, states that the agency will lean heavily on established medical schools and the urban medical centers of the nation.

87,001 Illegitimate Births Reported in Nation

Census Bureau reports that there were 87,001 illegitimate births in 1944, a gain of 4,415 over 1943, in thirty-eight states and the District of Columbia. When allowance is made for those not reported, it was estimated that there would be 100,000 illegitimate births. The 87,001 does not record illegitimate births in California, Colorado, Connecticut, Maryland, Massachusetts, Nebraska, New Hampshire, New Mexico, New York and Wyoming, which do not require statements on legitimacy for birth registration. Of the total recorded, 36,252 were white and 50,749 nonwhite.

Wide Acclaim for Voluntary Prepaid Medical Plan

The American Medical Association plan to establish a national system of voluntary prepaid medical care was widely publicized by the Washington press and evoked favorable comment. Coincident with the announcement from the House of Delegates of the Association, sponsors of the Truman health plan bought advertising space in daily papers to advocate its passage and to reiterate Mr. Truman's claim that it was not socialized medicine.

House Approves Another Billion and Half for UNRRA

The House has approved a bill authorizing a second government contribution to the United Nations Relief and Rehabilitation Administration of \$1,350,000,000. The bill has been sent to the Senate. It carries a rider calling on President Truman to try "through appropriate channels to facilitate" the entry of American newspapermen into countries receiving UNRRA assistance.

Capital Notes

Finest recognition of psychologists is that military establishments are setting up permanent sections, John G. Jenkins, Navy Aviation Psychology Chief, told the American Psychological Association. Millard W. Rice, national service director, disabled American veterans, told the National Council of the Physically Handicapped, "The handicapped will be the first fired and the last hired."

During hearings on the proposal to license practical nurses in the District of Columbia it was suggested that the District Nurses Examining Board be stripped of control over the nursing profession.

Childrens Hospital doctors have started a "research foundation" to compile all discoveries made in the hospital wards, marking the hospital's seventy-fifth anniversary.

Lieut. Col. S. Ross Taggart, soon to be discharged from the Army Medical Corps, has been named director of the District of Columbia Bureau of Venereal Diseases.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Veterans Administration

The bill to establish a Department of Medicine and Surgery in the Veterans' Administration, H. R. 4717, has passed the House of Representatives. As passed, the bill contains the provision under which the utilization of osteopathic services in veterans' hospitals will be authorized. In the Senate, the bill has been referred to the Senate Committee on Finance.

The construction of veterans' hospitals in or near the city of Ukiah, Mendocino County, Calif., and at Paradise, Butte County, Calif., will be authorized respectively by H. R. 4738 and H. R. 4741, both introduced by Representative Lea, California.

A bill introduced by Representative Peterson, Florida, H. R. 4847, proposes domiciliary and hospital care for veterans with non-service connected injuries or diseases who have reached the age of 65 years.

Senator Langer, North Dakota, proposes by S. 1633 that the Secretary of War be directed to provide facilities and personnel for the hospitalization and treatment of members of the armed forces suffering from transverse myelitis or related disabilities "at one hospital located in an area in which climatic conditions are favorable for treatment of such cases, and to transfer to such hospital all such persons undergoing or in need of hospitalization and treatment."

A Senate bill, S. 1626, introduced by Senator McFarland, Arizona, proposes that, in the administration of laws providing for the hospitalization and treatment of former members of the armed forces and laws providing for the payment of pensions to former members of the armed forces or their dependents, any person who is disabled as a result of injuries incurred, or disease contracted, subsequent to Sept. 15, 1940 in the performance of his duties as a member of the American field service shall be deemed to have incurred such injuries or contracted such disease in line of duty while serving on active duty in the armed forces.

Representative Hedrick, West Virginia, by H. R. 4679, proposes to provide compensation for veterans of World War II who have had tuberculosis.

Barbiturates

By H. Res. 440, submitted by Representative Rogers, Massachusetts, the Secretary of the Treasury will be requested to furnish the House of Representatives (1) such facts as may be in his possession regarding the use by the public of barbiturates and (2) the facts with respect to the best method or methods of protecting the consuming public from the improper use of barbiturates resulting from the indiscriminate distribution and sale of such drugs.

Navy Medical Corps

S. Res. 200, submitted by Senator Reed, Kansas, would request the Secretary of the Navy to appoint a board of inquiry to ascertain why the demobilization of medical and dental officers has not been expedited.

The Hill-Burton Hospital Construction Bill

S. 191, the Hill-Burton hospital construction bill, has passed the Senate in substantially the same form in which it was reported by the Senate Committee on Education and Labor.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Surgical Meeting.—Honorary membership in the Los Angeles Surgical Society was presented to Dr. Frederick A. Collier, professor and head of the department of surgery, University of Michigan Medical School, Ann Arbor, during the annual meeting of the society, December 13, at the California Club, Los Angeles. Dr. Collier addressed the meeting on "Replacement Therapy Following Operation and Other Types of Trauma." The retiring secretary-treasurer, Dr. Conrad J. Baumgartner, Los Angeles, will assume the presidency in 1946, and Dr. Kenneth E. Smiley, Los Angeles, will become secretary-treasurer.

Violation of Health and Safety Code.—Four persons in Long Beach who violated the health and safety code have been indicted by the grand jury for criminal conspiracy on evidence collected by four state agencies, the bureau of food and drug inspections of the California state department of public health, the department of justice, the state board of pharmacy and the state board of medical examiners. One of the persons, a chiropractor, is the owner of what was known as the Metropolitan Health Institute. Three other persons who were called doctors but were not licensed gave "health" lectures at the institute, which was located on the Pike in Long Beach. Essentially, according to *California's Health*, the institute was a medicine show. Drugs, principally laxatives, were sold under fancy names for fancy prices. It was claimed that these drugs would cure such disorders as arteriosclerosis, Bright's disease, cholecystitis, gallstones, heart and vascular diseases, high blood pressure, dental caries, nephritis, prostate gland disorders, pyelitis, sexual impotence, sinus infection, uremia, ulcers of the stomach and varicose ulcers. The purchaser of the nostrum would be given a certificate at the time of the purchase entitling the purchaser to a free consultation at the clinic. The chiropractor, who owned the business, made the examinations and diagnosis at the clinic. He prescribed the same drugs for the same disorders as had previously been recommended by the spiliers. It is estimated that 80 to 90 per cent of the patients were over 60 years of age. The individuals, who were not named in *California's Health*, November 15, are charged with falsely advertising various drugs, representing certain drugs as having an effect on certain diseases, with operating a clinic without a license, practicing medicine without a license and for violation of the Chiropractic Act in the prescribing of drugs.

COLORADO

Harvey Sethman Returns to State Society.—Major Harvey T. Sethman has been relieved of active duty with the Medical Administrative Corps of the Army and has returned to his positions as executive secretary of the Colorado State Medical Society and managing editor of the *Rocky Mountain Medical Journal*. Mr. Sethman has resumed his positions with the society as of December 1. The board of trustees of the society request that addresses for official correspondence and exchange journals be appropriately changed, noting that the office and mailing address of the society and the *Journal* remain at 537 Republic Building, Denver 2, as in the past.

FLORIDA

Survey of Anemia.—The Alachua County Medical Society has endorsed a program now under way to test all school children in the county to determine the cause of borderline anemia. The work is being directed by Dr. Walter E. Wilkins, Raleigh, N. C., U. S. Public Health Service.

Personal.—Dr. Annette M. B. Feaster, St. Petersburg, president of the Pinellas County Medical Society, is the first woman to hold this office. Dr. Feaster has also served as secretary of the society.—Dr. Leland H. Dame, Sebring, has been appointed health director of Orange County to succeed Dr. William P. Rice, resigned.—Dr. Charles G. Hedges, Vallejo, Calif., has been appointed superintendent of the Jackson Memorial Hospital, Miami.

ILLINOIS

Scientist Honored For Work on Betatron.—Donald W. Kerst, Ph.D., Urbana, on November 16 was presented with the \$3,000 Cyrus B. Comstock Prize of the National Academy of Sciences in recognition of his invention of the betatron. The award is given every five years for "the most important discovery or investigation in electricity or magnetism or radiant energy." Kerst was selected for the honor in 1943, but the presentation was forbidden by wartime secrecy.

Chicago

Personal.—Leslie D. Reid, assistant superintendent of the Presbyterian Hospital since July 1944, has been named superintendent to succeed Herman Hensel, who resigned because of ill health.

Memorial Services for Peter Bassoe.—Memorial services for Dr. Peter Bassoe, who died November 5, were held in the Presbyterian Hospital December 16 with Dr. James B. Herrick presiding. Dr. Bassoe's life was discussed by Dr. Ludvig Hektoen and his work in the Presbyterian Hospital, Rush Medical College and the University of Illinois by Dr. Ernest E. Irons, in the Chicago Neurological Society, Institute of Medicine of Chicago and American Neurological Association by Dr. Lewis J. Pollock and in the Illinois Psychiatric Society, Chicago Pathological Society and Central Neuropsychiatric Association by Dr. Percival Bailey.

Addition for Experimental Animals.—The fifteenth floor of the Ward Memorial Building, Northwestern University Medical School, is now under construction for the housing of experimental animals. The equipment will be the most modern type, with air conditioned and temperature controlled rooms, stainless steel cages and tile walls and floors. One wing will have animal quarters to be used principally for receiving and housing dogs; the other wing is to have rooms which will be occupied by the Institute of Neurology and other departments that use animals for experimental purposes. The wing on the fourteenth floor, vacated through the addition of the new floor, will be used by the department of experimental medicine.

James Leary Resigns from Daily News.—James C. Leary, science editor of the Chicago *Daily News*, has resigned to become research associate with Lawrence C. Salter & Associates, Consultants for Science, Chicago and New York. Mr. Leary will make his headquarters at the home office of the organization in Chicago. As research associate, Mr. Leary will work on several of the scientific research projects being carried out for various clients of the Salter consultants. Mr. Leary had served on the staff of the Newark, N. J., *Evening News*, Newark *Star-Eagle* and the Chicago bureau of the Associated Press before joining the Chicago *Daily News* in 1935. He is president-elect of the National Association of Science Writers, a member of the committee on information of the Division of Medical Sciences of the National Research Council, a consultant to the Surgeon General of the Army, Major Gen. Norman T. Kirk, and a member of Sigma Delta Chi, the national professional journalistic fraternity, and of the National Press Club, Washington, D. C.

KANSAS

Changes in Health Personnel.—Dr. Harvey L. Bogan, Baxter Springs, has been appointed temporary part time officer of Cherokee County and Dr. Louise V. F. Richmond, Hutchinson, has been named a part time health officer of Reno County. Dr. James E. Wolfe, who for many years has served as part time health officer of the city of Wichita, is now director of the Wichita Health Department, which since July 1 has been operating on a full time basis. Dr. John W. Turner, Wichita, health officer of Sedgwick County, has been granted a year's leave of absence to study at the University of Michigan School of Public Health, Ann Arbor; Dr. Horace Dale Palmer Jr. will serve as assistant health officer during Dr. Turner's absence. Dr. Joseph W. Spearing, Columbus, has been named a member of the state board of health to fill the vacancy caused by the death of Dr. Harry L. Aldrich, Caney.

MAINE

Outbreak of "Mysterious Disease."—Newspapers report the recent closing of the public schools in Waterville because of a "mysterious disease" which caused the death of 4 children and forced nearly 500 of the 2,700 pupils in the city schools to be absent from classes. According to the reports, November 15, Dr. Arthur R. Daviau, city health officer, attributed the outbreak to "diphtheria and something else" which had not been identified. The order not only closed the schools, but banned the pupils from theaters and other public places.

MASSACHUSETTS

State Society Sets Up Postwar Loan Fund.—A Postwar Loan Fund has been set up and all discharged medical officers who were members of the Massachusetts Medical Society in good standing at the time of their entry into the service may apply for loans from this fund. For further information apply to Dr. George L. Schadt, Chairman, Postwar Loan Fund, 8 Fenway, Boston 15.

Eugene Eppinger Appointed Assistant Dean.—Col. Eugene C. Eppinger, formerly physician to students, Harvard Medical School, Boston, has been appointed assistant dean in charge of courses for graduates. He succeeds Dr. Frank R. Ober, who has been doing this work since 1928. The new appointment will be effective January 1. Dr. Eppinger will take over the direction of all courses for graduates, including the refresher courses for returning veterans. The initial plans for these courses have been drawn up by Dr. Chester M. Jones, Boston, and a committee. On the assumption of his new duties, Dr. Eppinger will implement the work of that committee as well as supervise the other courses of instruction for physicians.

Loren Moore in Charge of New Blood Program.—Col. Loren D. Moore, M. C., U. S. Army, retired, who recently became assistant director of the division of biologic laboratories of the Massachusetts Department of Health, will be in direct charge of the new civilian blood service program which has been inaugurated by the state department (THE JOURNAL, November 24, p. 894). Voluntary blood donations will be collected throughout the state by a mobile team, with the assistance of local chapters of the American Red Cross and other community agencies. The team will operate first in those areas which are not at present served by community blood and plasma banks. Collection of blood donations are to begin this month.

MICHIGAN

New Cancer Clinic.—The Women's Cancer Detection Clinic, Inc., was opened in the Hancock School, Detroit, on November 19. The clinic is sponsored by the Detroit Federation of Women's Clubs and is patterned after a number of such clinics functioning throughout the country. No treatments will be given, but, if symptoms calling for medical attention are found, the patient will be referred to her family physician. Dr. Mary Margaret Frazer, Detroit, is medical director. The clinic has been provided by the Detroit Board of Education and the Wayne County Medical Society. It will be maintained by contributions from interested examinees, citizens and organizations who wish to further its work.

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MASSACHUSETTS

State Society Sets Up Postwar Loan Fund.—A Postwar Loan Fund has been set up and all discharged medical officers who were members of the Massachusetts Medical Society in good standing at the time of their entry into the service may apply for loans from this fund. For further information apply to Dr. George L. Schadt, Chairman, Postwar Loan Fund, 8 Fenway, Boston 15.

Eugene Eppinger Appointed Assistant Dean.—Col. Eugene C. Eppinger, formerly physician to students, Harvard Medical School, Boston, has been appointed assistant dean in charge of courses for graduates. He succeeds Dr. Frank R. Ober, who has been doing this work since 1928. The new appointment will be effective January 1. Dr. Eppinger will take over the direction of all courses for graduates, including the refresher courses for returning veterans. The initial plans for these courses have been drawn up by Dr. Chester M. Jones, Boston, and a committee. On the assumption of his new duties, Dr. Eppinger will implement the work of that committee as well as supervise the other courses of instruction for physicians.

Loren Moore in Charge of New Blood Program.—Col. Loren D. Moore, M. C., U. S. Army, retired, who recently became assistant director of the division of biologic laboratories of the Massachusetts Department of Health, will be in direct charge of the new civilian blood service program which has been inaugurated by the state department (THE JOURNAL, November 24, p. 894). Voluntary blood donations will be collected throughout the state by a mobile team, with the assistance of local chapters of the American Red Cross and other community agencies. The team will operate first in those areas which are not at present served by community blood and plasma banks. Collection of blood donations are to begin this month.

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GENERAL

Conference of Presidents.—A Conference of Presidents of the state medical societies called by the California and Michigan state medical societies in Chicago, December 2, elected Dr. Andrew S. Brunk, Detroit, president. Dr. Philip K. Gilman, San Anselmo, Calif., was named president-elect and Mr. Harvey T. Sethman, Denver, was chosen secretary-treasurer.

Christopher Shaw Named Educational Director for College of Physicians.—Dr. Christopher C. Shaw, formerly of Bellows Falls, Vt., has been appointed educational director of the American College of Physicians, effective November 1. The position is a newly created one. Dr. Shaw, under the executive secretary of the college, has immediately taken over the direction of the postgraduate courses, research fellowships, clinical fellowships, program for the aid of members returning from the armed services and other educational features in the college program. Dr. Shaw was recently separated from active duty in the Navy.

Change in Examination in Ophthalmology.—As a result of transportation difficulties the examination of the American Board of Ophthalmology originally scheduled to be held in Los Angeles, January 28-31, has been changed to San Francisco, June 22-25. Other examinations will be Chicago, January 18-22; New York, about April 10-13, and Chicago, October 9-12. A new ruling requires that previously accepted candidates mail their lists of surgery to the board office at least sixty days prior to their examination. All new applicants are now required to send their list with their application. Dr. S. Judd Beach, Portland, Maine, is secretary-treasurer of the board.

New Assistant Medical Director for Infantile Paralysis Foundation.—Dr. Hart E. Van Riper, who since March 1944 has been medical director of the James M. Jackson Memorial Hospital, Miami, Fla., has been appointed assistant medical director of the National Foundation for Infantile Paralysis as assistant to Dr. Don W. Gudakunst, New York, medical director. Dr. Van Riper will supervise the foundation's extensive program of medical care and treatment for infantile paralysis patients throughout the United States. A graduate of the University of Pennsylvania School of Medicine, Philadelphia, in 1930, Dr. Van Riper served in 1941 as assistant director for maternal and child health in the division of health services of the U. S. Department of Labor.

National Physicians Committee Holds Annual Conference.—The National Physicians Committee for the Extension of Medical Service held its sixth annual conference of the professions and industries on the extension of medical service, group insurance programs and prepayment medical care plans. The meeting was at the Waldorf-Astoria, New York, November 26. Among the speakers on the program were Dr. Claude Robinson, Princeton, N. J., "What People Think About the Distribution of Medical Care and Payment of Costs"; Herbert D. Simpson, Ph.D., Evanston, Ill., "Preliminary Report on Nationwide Study of Physician Sponsored Medical Care Plans," and Dr. Morris Fishbein, Chicago, "Federal Subsidy for Hospitals and Scientific Research—Pending Legislation—Postwar Medical Service—Position and Prospects." The morning session was addressed by Mr. Edward F. Stegen, associate administrator of the National Physicians Committee, on "Physician Cooperation and Support."

Borden Undergraduate Awards.—The annual award of \$500 for excellence of research has been established at twenty-two medical schools in the country in an effort to assist the schools in developing a greater interest among undergraduates in medical research. The first school to make the award in the program is Duke University (*THE JOURNAL*, September 15, p. 223). Other universities which are participating in the program are California, Chicago, Columbia, Cornell, Harvard, Iowa, Johns Hopkins, Michigan, Minnesota, New York, Northwestern, Ohio, Pennsylvania, Rochester, Stanford, Tulane, Vanderbilt, Washington, Western Reserve, Wisconsin and Yale. The Borden Foundation has deposited \$2,500 with each university, with the understanding that the sum will be used by the university to establish an annual award to be known as the Borden Undergraduate Research Award in Medicine. Only one award of \$500 is to be made during any one calendar year, and the awards will be made for a period of not less than five years.

Van Meter Prize Award.—The American Association for the Study of Goiter again offers the Van Meter Prize Award of \$300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association, which will be held in Chicago in April or May 1946, provided essays of sufficient merit are presented in competition. The competing essays may cover either clinical or research investigations, should not exceed three thousand words in length, must be presented in English, and a typewritten double spaced copy sent to the corresponding secretary, Dr. Thomas C. Davison, 207 Doctors Building, Atlanta 3, Ga., not later than February 20. A place will be reserved on the program of the annual meeting for presentation of the prize award essay by the author if it is possible for him to attend. The essay will be published in the annual proceedings of the association. This will not prevent its publication, however, in any journal selected by the author.

Society News.—A joint conference will be held in Chicago, April 8-13, by the American Association of Industrial Physicians and Surgeons, the American Industrial Hygiene Association, the National Conference of Governmental Industrial Hygienists, the American Association of Industrial Nurses and the American Association of Industrial Dentists.—The next international assembly of the Interstate Postgraduate Medical Association of North America will be held at the Cleveland Public Auditorium, Cleveland, October 15-18.—The Federation of American Societies for Experimental Biology will meet in Atlantic City beginning March 11. The federation is composed of the American Physiological Society, the American Society of Biological Chemists, the American Society for Pharmacology and Experimental Therapeutics, the American Society for Experimental Pathology, the American Institute of Nutrition and the American Association of Immunologists.—The eleventh annual meeting of the Mississippi Valley Medical Society will be held September 25-27 at the Hotel Jefferson, St. Louis. Owing to the fact that no meeting was held in 1945, all the officers of the society have been retained for another year. These include Drs. Grayson L. Carroll, St. Louis, president; Walter A. Sternberg, Mount Pleasant, Iowa, president-elect; Louis H. Jorstad, St. Louis, Elmer E. Nystrom, Peoria, Ill., and Ernest J. Lessenger, New London, Iowa, vice presidents, and Harold Swanberg, Quincy, Ill., secretary-treasurer.

Special Society Elections.—Mr. Basil O'Connor, chairman, American Red Cross, was elected chairman of the board of governors of the League of Red Cross Societies at a recent three day meeting in Paris, the first since 1938. Although the meeting was called for the purpose of electing officers and planning the peacetime program of the league, its primary concern was rebuilding the worldwide character of the Red Cross movement by revitalizing the member societies, some of which are now struggling for existence in the wake of war.—At the annual meeting of the Western Surgical Association in Chicago, November 30-December 1, Dr. Arthur R. Metz, Chicago, was named president; Drs. Herbert H. Davis, Omaha, and LeRoy B. Sherry, Pasadena, Calif., vice presidents; Dr. Warren H. Cole, Chicago, secretary, and Dr. William M. Mills, Topeka, Kan., treasurer. The 1946 meeting of the association will be held in Memphis, Tenn., December 9-11.—At the third annual meeting of the American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, Inc., November 15, the following officers were chosen: Drs. Alfred Schattner, New York, president; Jacob Daley, New York, vice president; Benjamin H. Shuster, Philadelphia, treasurer, and Norman N. Smith, New Haven, Conn., secretary.—Dr. William S. McElroy, Pittsburgh, was chosen president-elect of the Association of American Medical Colleges during its annual meeting in Pittsburgh October 29-31. Dr. John W. Moore, Louisville, was installed as president. Other officers included Joseph C. Hinsey, Ph.D., New York, vice president; Dr. Fred C. Zapffe, Chicago, secretary, and Dr. Arthur C. Bachmeyer, Chicago, treasurer. The 1946 meeting will be held in New Orleans October 28-30.

CORRECTION

Intravenous Anesthesia for Orthopedic Surgery.—In the article by Dr. George J. Thomas in *THE JOURNAL*, November 17, under "Complications and Their Management" on page 791 and in line 9 of this paragraph, "oxide and nitrogen" should read "oxide and oxygen," the sentence reading "However, occasionally it is found necessary to administer nitrous oxide and oxygen."

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 17, 1945.

A New British Antimalarial Drug

The loss of Java early in the war resulted in a worldwide shortage of quinine. Much was done in this country and the United States to find new drugs for the treatment of malaria. A new drug has been discovered in the laboratories of the Imperial Chemical Industries, a British firm, which is to be distributed under the name of paludrine. Its composition is not disclosed but the following information was reported to the Medical Research Council during the development of the substance. Early in 1942 a group of chemists and biologists began the search for a new synthetic antimalarial drug which could not only replace quinine but be more effective in preventing and treating malaria. Antimalarial activity was found in several compounds, but not until 1944 was a satisfactory compound synthesized. It was remarkably active against experimental infections of chicks with *Plasmodium gallinaceum* and other forms of avian malaria. Successful clinical trials were made at the Liverpool School of Tropical Medicine by Dr. A. R. D. Adams and Professor T. H. Davey. Supplies of the compound were sent by air to Australia, where its action in preventing malaria in volunteers exposed to infected mosquitoes was investigated. Other studies are in progress in medical schools in Britain and in India.

The new compound is a white powder which does not cause yellowing of the skin, as does mepacrine hydrochloride. The chemical formula is simple and differs fundamentally from other antimalarials. It is rapidly absorbed when given by mouth but excreted slowly, about a third in the urine. It is well tolerated in doses up to 0.5 Gm. twice daily. Gastrointestinal irritation is the only untoward effect so far observed from large doses. This reaction can be avoided by dividing the dose. The treatment is doses of the drug twice a day for fourteen days. The smallest amount that will terminate an attack of benign tertian malaria appears to be 10 to 50 mg., a fifteenth of the maximum tolerated dose. Unfortunately (as with quinine and mepacrine hydrochloride) relapses are frequent. The response of malignant tertian malaria is similar but relapses are less frequent. The effect on quartan malaria has not yet been studied. As a preventive paludrine seems equal or superior to mepacrine hydrochloride and much superior to quinine.

Fiftieth Anniversary of Roentgen's Discovery

The fiftieth anniversary of Roentgen's discovery of the x-rays was commemorated by an all day conference of the Royal Society attended by British, Swedish, French and Dutch scientists. The president, Sir Henry Dale, remarked that much of the early interest in the discovery centered in its potential value to medicine and surgery, a value that has steadily grown. To physical science it was a discovery which has revolutionized fundamental concepts of physics and chemistry, which have culminated in nuclear fission. Physics at the end of 1895 was regarded as an exact science presenting a field of knowledge in which it was unlikely that any startling new chapter would be opened. The discovery of the x-rays came as a stimulating shock to this attitude.

Sir Lawrence Bragg brought to the meeting two reprints dedicated and sent to J. J. Thomson by Roentgen, their author. They were dated December 1895 and March 1896. The earlier paper contained a measurement of the relative transparency to x-rays of different materials. It showed the

bones of the hand and a compass visible through a metal box. These papers showed that Roentgen realized the implications of what we are likely to regard as a chance discovery.

At a meeting held at the Royal Society of Medicine the minister of health, Mr. Bevan, honored the devoted band of workers who had suffered death and injury in applying and developing Roentgen's discovery. It is noteworthy that not one of Roentgen's countrymen were present at either of these functions.

Honor for an American Pathologist

The Parkes Weber prize and medal of the Royal College of Physicians has been awarded to Dr. Eugene L. Opie, professor of pathology, Cornell University, for his work on the pathogenesis of tuberculosis of the lungs.

PARIS

(From Our Regular Correspondent)

Nov. 20, 1945.

Antagonists of Histamine

In such conditions as urticaria, asthma, eczema and herpes, in arsenical erythrodermia and in pruriginous lesions the intervention of a histamine factor must be taken into consideration. The histamine factor plays a part also in the production of visceral infarcts. In the blood of a patient affected by urticaria and Quicke's edema, Cerqua and Gajdas have discovered histamine in amounts of 200 to 300 micrograms per liter as against 30 to 60 micrograms per liter in the normal physiologic state.

In 1940 Halpern proved the antihistamine action of antergan, or 2339 R. P., since employed by clinicians with variable results. Antergan acts in serum accidents so that pruritus disappears half an hour after treatment; but arthralgias are more resistant. In two thirds of the cases of urticaria the results are favorable, especially in alimentary urticaria. Good results are also obtained in acute eczema, with less uniform achievements in the sub-acute and chronic forms. Antergan also acts favorably on medicinal dermatosis. In asthma (particularly as a preventive measure) from one third to one half of the cases are benefited. In migraine, results are not uniform. No results have been obtained in traumatic shock, postoperative shock and shock from burns. Antergan is often poorly tolerated and causes digestive and nervous disturbances: gastric burns, anorexia, nausea or vertigo. Children tolerate it better than adults. Recently at the Société de biologie, Bovet, Horclois and Walther described experiments made on guinea pigs with a new antagonist of histamine: neoantergan, or 2786 R. P., which is less toxic, more active and better tolerated. The dosage of 1 to 10 mg., as against 20 mg. of antergan, protects the guinea pig against anaphylactic (or histamine) shock. The authors remarked also that neoantergan in the guinea pig impedes or diminishes the increase of permeability of cutaneous capillaries caused by an intradermal injection of histamine. At a meeting of the Société médicale des hôpitaux de Paris, Decourt described the clinical results obtained with neoantergan. He has found that its activity in man is three times greater than that of antergan. To attenuate untoward reactions of neoantergan it is necessary to start with a small dose, for adults 0.1 Gm. orally administered during meals and then to increase the doses rapidly (as a rule to 0.6 or 0.8 Gm. daily). The doses vary to a great extent from one patient to another and from day to day in the same patient. In case of nontolerance (nausea and gastric spasms) the original dose of 0.1 Gm. three times daily during meals should be renewed until it is well tolerated (as a general rule from twenty-four to forty-eight hours). Interrupted treatment is begun again with a small dose. It is possible to use the parenteral route for administration of neoantergan. With neoantergan, 90 per cent of the cases of asthma show improvement without using poorly tolerated doses.

Synthetic antihistamine does not prevent the release of histamine but seems to render the tissues incapable of reacting to histamine (a similar phenomenon characterizes the atropine-acetylcholine antagonism). Neoantergan shows an analogous chemical structure to histamine, and it is possible that this action is a phenomenon of competition.

In October 1945 at the sixty-fourth congress of the French Association for the Advancement of Sciences, Halpern disclosed, in his lecture on "Synthetic Antihistamine," that he is now making experiments on animals with a new antihistamine product, 3015 R. P. This new product belongs to the same series as antergan and neoantergan but contains neither aniline nor pyridine. The author did not, in this lecture, reveal its chemical formula. In the guinea pig this product showed an antihistaminic power from eight to ten times higher than that of neoantergan.

Intravenous Procaine Hydrochloride

Intravenous procaine hydrochloride, 5 to 10 cc. of 1 per cent solution, is often employed to diminish the pathologic effect of histamine. Justin Bezançon and R. Fleury used procaine 5 cc. intravenously in herpes and postherpetic pain. This treatment alleviates the pain in recent herpes but does not affect the evolution of the herpes. Intra-arterial procaine is also employed in the treatment of embolism and thrombosis. In order to be efficacious, this treatment must be begun as early as possible.

Vitamin D₂ for Lupus Vulgaris

Charpy of Dijon has developed a method of treating tuberculosis of the skin with strong doses of vitamin D₂ and calcium gluconate. Charpy prescribes 5 mg. of vitamin D₂ and 1 to 2 liters of milk daily or 0.5 Gm. of calcium gluconate by mouth twice daily. The patient is placed on a salt poor diet. As a rule the treatment lasts three months. The author was successful in all of the 38 cases treated. In the *Revue médicale française* Gougerot and Gaullier mention only 3 failures in 21 cases treated. Degos explained his modification of Charpy's technic: He prescribes in the first week three doses of 15 mg. of vitamin D₂, the two following weeks two doses, then one dose weekly for sixteen weeks, and calcium gluconate 0.5 Gm. twice daily. The best results are obtained in lupus vulgaris; this treatment is far less efficacious in other forms of cutaneous tuberculosis. In order to avoid accidents such as sclerosis, arterial calcification or the possible toxic action of strong doses of D₂, the authors stress the use of vitamin D₂ chemically pure in alcoholic solution. The oil solution is less active or inactive.

Application of Electroencephalography in Legal Medicine

At the sixty-fourth Congress of the French Association for the Advancement of Science, held in October, A. Baudoin, dean of the Faculté de médecine, and Fischgold discussed the rational use of electroencephalography in legal medicine. Several preliminary conditions must be considered, such as the standardization of the technic of recording, a clear definition of the normal rhythm and its alterations, knowledge of metabolic factors (glycemia 0.002) which control the cerebral rhythm and a consideration, on the basis of extensive statistics, of the percentages of normal and abnormal tracings in disorders pertaining to legal medicine. Legal medicine can, however, profit by the use of the electroencephalographic technic in doubtful cases of epilepsy. In persons said to have nonverified crises of grand mal the presence of wave and spike (*pointes ondes*) tracings will indicate grand mal, whereas a normal tracing taken immediately after an alleged crisis will make certain patients open to suspicion as malingerers. In subjects showing abnormal psychic behavior a tracing with waves and spikes will indicate epilepsy; whereas a normal

tracing is not conclusive. In statistics comprising all forms of epilepsy, Gibbs and Lennox find that 29.3 per cent of the epileptic show wave and spike tracings, 28.7 per cent show abnormal tracings and 32 per cent reveal tracings which are normal or within the limits of normal. According to Baudoin, Fischgold and Remond, in cases of idiopathic grand mal in young patients examined immediately after a crisis only 2 per cent show normal tracings.

In cases of head injuries the results of electroencephalographic examinations must be compared with special examinations: radiography of the skull, examination of the fundus of the eye and of the acoustic nerve and of pneumography. The normal or abnormal tracing must be interpreted on the basis of previously established statistics.

According to Puech, Fischgold and G. and J. Verdeaux the statistics reveal that there is an improvement of the tracing in the year following the trauma. Thirteen per cent improve in the first fifteen days, with the normal rate rising to about 50 per cent by the end of the first year. If epilepsy occurs there is a reappearance of the anomalies; on the other hand, a subjective syndrome alters the tracing far less. Evident alterations are to be found in 8 per cent of the totally cured traumatic patients, in 20 per cent of those showing a subjective syndrome and in 33 per cent of the traumatic patients. The alteration does not have absolute value, but its presence renders more or less probable the organic basis, the severity and the existence of the post-traumatic syndrome.

In carbon monoxide intoxication the tracing remains altered for a variable period; its normalization accompanies either a cure or definitive lesions. The greatest care is necessary in the interpretation of the tracings and the practical conclusions which can be derived from them.

MEXICO

(From Our Regular Correspondent)

Nov. 5, 1945.

First Inter-American Meeting on Typhus

The first Inter-American Meeting on Typhus, sponsored by the Mexican Secretariat of Public Health and Welfare, by the Institute of Inter-American Affairs and by the Pan American Sanitary Bureau in Washington, D. C., and organized by the Mexican Typhus Fever Commission, was held in Mexico City during the week of October 7 to 13. The sessions were held in the School of Public Health and Hygiene, with the exception of one, which took place in the typhus laboratory of the City General Hospital.

The opening session was presided over by Dr. Francisco Castillo Nájera, secretary of foreign relations, Mr. Jaime Torres Bodet, secretary of public education and Dr. Manuel Martínez Baez, undersecretary of public health and welfare and president of the Mexican Typhus Committee. Dr. Miguel E. Bustamante, epidemiologist of the Institute of Health and Tropical Diseases, introduced the distinguished guests and other scientists. Dr. Rolla E. Dyer, director of the National Institute of Health in Bethesda, Md., and president of the Pan American Typhus Commission, summarized what had been done in the study and treatment of the rickettsial diseases.

In the Monday session, general reports on the status of rickettsial diseases in the American continent were made by Drs. Juan Antonio Montoya, member of the Pan American Typhus Commission, Gerardo Varela of the Mexican Committee on Typhus, Julio Roberto Herrera of Guatemala, Luis Patiño Camargo of Colombia, Attilio Machiavello of Ecuador, who represented several South American countries on the Pacific Coast, Eugenio Suarez from the republic of Chile, Norman H. Topping of the National Institute of Health in Bethesda, Md., and several others.

The sessions held on Tuesday, Wednesday and Friday were devoted to the reading of papers, discussion and comments on the epidemiology of typhus, procedures and methods for the diagnosis of rickettsiosis, the pathology, hematology, symptomatology, therapeutics and prophylaxis of typhus and other rickettsial diseases, problems of nomenclature and reports on the present knowledge of rickettsiosis and on the control of typhus during war.

Among the delegates of the United States who attended the meeting were Drs. Rolla E. Dyer and Norman H. Topping of the National Institute of Health in Bethesda, Md.; Drs. Joseph E. Smadel and Arthur C. Allen of the United States Army and Otto L. Burton of the United States Navy; Drs. Hugh H. Smith and Fred L. Soper of the International Health Division of the Rockefeller Foundation; Col. John D. Yeagley and Drs. Charles L. Von Poole and Theodore L. Gandy of the Institute of Inter-American Affairs, Washington, D. C.; Dr. R. R. Parker of the Rocky Mountain Laboratory, Hamilton, Mont.; Dr. Herald R. Cox of the Lederle Laboratories, Pearl River, N. Y.; Dr. Fred Stimpert of the Biological Research Laboratory, Parke, Davis & Co., Detroit; Drs. H. H. Stage and E. F. Knipling of the Department of Agriculture, Washington, D. C.; S. H. Bohles of the Texas State Health Department; Dr. Federico Musacchio, local health officer in Laredo, Texas; Drs. George R. Hermann and Ludwig K. Agnistein of the University of Texas Medical Branch; Dr. Malcolm H. Soule from the University of Michigan Medical School; Dr. Gustave Freeman from the University of Chicago School of Medicine; Dr. James A. Reyners of the University of Notre Dame; Dr. Leslie A. Chambers of the University of Pennsylvania School of Medicine; Dr. Henry A. Pinkerton from the St. Louis University School of Medicine and Dr. Harold A. Wood, Attilio Machiavello and Juan Antonio Montoya of the Pan American Sanitary Bureau's Typhus Commission.

Delegates from the Latin American republics were Dr. Eugenio Suarez of Chile, Dr. Roberto Nevares Vázquez of Ecuador, Dr. Luis Patiño Camargo of Colombia, Dr. Antonio Trueba Colominos from the Dominican Republic, Drs. Julio Roberto Herrera, Enrique Padilla, Carlos Tejeda and Daniel Jobbins, all of Guatemala, Dr. Roberto R. Boice of El Salvador, Drs. Arturo Curbelo, Alberto Recio and Guillermo Lage from Cuba and, from Mexico, Dr. Manuel Martínez Baez, undersecretary of public health and welfare, and Dr. Guillermo Román y Carrillo, professor of epidemiology in the School of Health and Hygiene, president and secretary of the Mexican Typhus commission, respectively; Dr. Maximiliano Ruiz Castañeda and Roberto Silva Goytia of the Typhus Laboratory; Luis Vargas, Gerardo Varela, Miguel E. Bustamante and Alberto P. León of the Institute of Health and Tropical Diseases; Carlos Ortiz Mariotte from the Division of Epidemiology; Samuel Morones and Santiago Castro Estrada, professors of communicable diseases in the School of Public Health and Hygiene; José Bustos, state health officer in the state of Veracruz; Alfonso Angelini, epidemiologist of the Federal District Health Office; George A. Payne, representative of the International Health Division, and E. Harold Hinman, representative of the Institute of Inter-American Affairs, both in Mexico, and Dr. González Guzmán, dean of the Faculty of Medicine.

Among the recommendations made are (1) prophylaxis by the use of dead germs, vaccines for immunization against typhus and other rickettsial diseases and the eradication of insects and defouling of animals, (2) the appointment of a technical inter-American committee for the study of a uniform and coordinated nomenclature, (3) the recording of rickettsial diseases and (4) the organization of a special department to deal with the control of rickettsial diseases with laboratory facilities for diagnosis in countries where such diseases prevail.

The Pan American Typhus Commission held three joint sessions, which were presided over by Dr. Rolla E. Dyer, president, and Dr. Juan Antonio Montoya, acting secretary.

Dr. Gustavo Baz, secretary of public health and welfare, presented the members of the meeting with a silver medal on which were engraved the figures of Ricketts, Nicolle and Zinsser. Reprints of a book entitled "Two Studies on Typhus" by the late Mexican clinician Dr. Miguel Jiménez, which was issued in 1876, were distributed.

The Fiftieth Anniversary of the Death of Louis Pasteur

The commemoration of the fiftieth anniversary of the death of the French scientist Louis Pasteur, organized by the Mexican Society of Natural History under the auspices of President Manuel Avila Camacho, Dr. Gustavo Baz, secretary of public health and welfare, Mr. Jaime Torres Bodet, secretary of public education, Mr. Marte R. Gómez, secretary of agriculture, Mr. Javier Rojo-Gómez, governor of the Federal District, Mr. Genaro Fernández-MacGregor, dean of the National University of Mexico, and Mr. Maurice Garreau Dombate, French ambassador, was celebrated during the week of September 24 to 30. The unveiling of pictures and plates of Pasteur took place in the General Hospital, in the National Institute of Hygiene, Pópotla, D. F., and in the Faculty of Medicine. A public meeting was held on Saturday morning the 28th before the Pasteur Memorial in Cuauhtemoc Square; the final ceremony took place in the Beaux Arts Theater on September 30, presided over by Dr. Baz. Ambassador Garreau Dombate, Dr. Manuel Martínez Baez, undersecretary of public health and welfare, and Professor Enrique Beltrán, secretary of the Mexican Society of Natural History, spoke on the life of Louis Pasteur and on the importance of scientific research from the social point of view. A large edition of the Biography of Louis Pasteur, written by Dr. Alfonso Pruneda, life secretary of the National Academy of Medicine, was distributed among the people.

Mexican Delegation to the Second International Conference on Agriculture and Nutrition

On October 12 Drs. Manuel Martínez Baez, undersecretary of public health and welfare, and Francisco de Paula Miranda, director of the National Institute of Nutrition, took one of the Pan American clippers for Quebec to attend, as members of the Mexican delegation, the second International Conference on Agriculture and Nutrition, to be held in Quebec.

Marriages

EDWARD B. MARENUS, Shamokin, Pa., to Miss Frances Barbara Kremer of Highland Park, N. J., September 20.

LONGSTREET CAVETT HAMILTON, Jackson, Miss., to Miss Johnette Blackledge of Laurel in New Orleans recently.

JOHN JAMES SMITH, Rahway, N. J., to Dr. Rosemary Veronica Gorman of Kingston, N. Y., November 28.

TERRY E. LILLY JR., Kansas City, Mo., to Miss Lillian Ethel Townsend in Lebanon, N. H., November 18.

Cecil JENNINGS HAWES, Conway, S. C., to Miss Ann Jackson Brattan of Woodbury, Tenn., October 6.

JOSEPH MARTIN FORD, Huntington, W. Va., to Miss Eliot James of New York, November 22.

THOMAS KERR LAIRD to Miss Ruth Lee Carper, both of Montgomery, W. Va., at Pocahtontas, Va., November 15.

CHARLES M. SHAFFER to Miss Vivian Maxine Watson, both of Carlisle, Pa., October 18.

JACK R. JARVIS, Towson, Md., to Miss Mary Irene Gracy in Lakeland, Fla., September 6.

STANLEY MARGOSHES, Lancaster, Pa., to Miss Doris Smith of Brooklyn, November 16.

Deaths

Guy Whitman Leadbetter * Washington, D. C.; born in Bangor, Maine, in 1893; Johns Hopkins University School of Medicine, Baltimore, 1920; clinical professor of surgery at George Washington University School of Medicine; specialist certified by the American Board of Orthopaedic Surgery, Inc.; member of the American Orthopaedic Association; president-elect of the American Academy of Orthopaedic Surgeons; secretary of the committee on orthopedic surgery of the National Research Council; orthopedic consultant to the Secretary of War during World War II; known for original work on the reduction of the fracture of the neck of the femur; on the staffs of the Children's Hospital, Washington Sanitarium and Hospital, George Washington University Hospital, Gallinger Municipal Hospital and the Providence Hospital; chief, orthopedic service, Central Dispensary and Emergency Hospital, where he died November 11, aged 52, of coronary occlusion.

Kendal Phelps Frost * Los Angeles; Rush Medical College, Chicago, 1916; born in Los Angeles on Nov. 9, 1890; clinical professor of medicine (dermatology) at the University of Southern California School of Medicine; specialist certified by the American Board of Dermatology and Syphilology; member of the American Dermatological Association, the Los Angeles Academy of Medicine and the American Academy of Dermatology and Syphilology; fellow of the American College of Physicians; served during World War I; attending dermatologist at the Hospital of the Good Samaritan and St. Vincent's Hospital; chairman of the department of dermatology and syphilis, Los Angeles County General Hospital; consulting dermatologist, Children's Hospital and the Santa Fe Coast Lines Hospital; died September 27, aged 54, of malignant hypertension.

Clement R. Jones * Pittsburgh; Columbus Medical College, 1892; born in Waynesburg, Ohio, Nov. 30, 1871; assistant professor of medicine at the University of Pittsburgh School of Medicine; professor of the principles of medicine, University of Pittsburgh School of Dentistry; certified by the American Board of Internal Medicine; member of the American Gastro-Enterological Association; fellow of the American College of Physicians, of which he had been treasurer and ex-regent; served as president of the American Therapeutic Society; on the staffs of the Pittsburgh City Home and Hospital, Mayview, Mercy and Presbyterian hospitals and Falk Clinic; died September 3, aged 73.

Samuel William Spencer Toms * Nyack, N. Y.; born in Elyria, Ohio, Dec. 11, 1861; University of Buffalo School of Medicine, 1891; member of the American Academy of Ophthalmology and Otolaryngology; member of the House of Delegates of the American Medical Association in 1911, 1913 and 1914; fellow of the New York Academy of Medicine; served as health officer of South Nyack; on the staff of the Nyack Hospital; captain, medical reserve corps, U. S. Army, not on active duty; member and formerly chairman of the publication committee of the *New York State Journal of Medicine*; died August 22, aged 83, of generalized arteriosclerosis.

Fred Dundas Jackson, Detroit; Detroit College of Medicine and Surgery, 1921; associate professor of clinical medicine at his alma mater, now known as the Wayne University College of Medicine; served during World War I; director of the outpatient department at the Receiving Hospital for many years; on the staffs of the Alexander Blain, Florence Crittenton and Providence hospitals; formerly in charge of the medical division of the Franklin Street Settlement Clinic; died in the U. S. Marine Hospital July 31, aged 54, of arteriosclerotic heart disease.

Joseph Bruce Alexander, Mansfield, Ohio; Eclectic Medical College, Cincinnati, 1918; formerly associate professor of surgical anatomy and principles of surgery at his alma mater; died in Cincinnati August 22, aged 57.

William Simon Ankenbrock, Indianapolis; Indiana University School of Medicine, Indianapolis, 1924; member of the American Medical Association; captain, medical corps, Army of the United States, not on active duty; on the staffs of St. Vincent's, Methodist and City hospitals; died September 28, aged 49, of cerebral hemorrhage.

Edward Louis Artman, Milwaukee; University of Pennsylvania School of Medicine, Philadelphia, 1913; served during World War I; formerly on the staffs of the Veterans Administration facilities in Fort Bayard, N. M., Los Angeles and Huntington, W. Va.; on the staff of the Veterans Administration Facility in Wood, where he died September 7, aged 54, of coronary occlusion.

Edward Saunders Babcock Jr. * Sacramento, Calif.; University of California Medical School, San Francisco, 1923; specialist certified by the American Board of Pediatrics, Inc.; member of the American Academy of Pediatrics; past president of the Sacramento Society for Medical Improvement; served during World War I; for many years physician for the Sacramento Orphanage; died in the Sutter Hospital September 3, aged 47, of chronic nephritis.

Ralph Edward Barnes, Greendale, Wis.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1908; member of the American Medical Association and the State Medical Association of Texas; formerly an executive of the Florida Public Health Association; past president of the Southern Tuberculosis Association and the Maryland Tuberculosis Association; had been affiliated with the Galveston County Health Unit in Texas; served during World War I; died August 21, aged 61, of carcinoma of the colon.

Bret Vernon Bates, Browns Valley, Minn.; University of Nebraska College of Medicine, Omaha, 1908; Drake University College of Medicine, Des Moines, 1909; member of the American Medical Association; awarded the Distinguished Service Cross for bravery during World War I; died in the Veterans Administration Facility, Minneapolis, August 6, aged 62.

William J. Beery, Detroit; Michigan College of Medicine and Surgery, Detroit, 1904; for many years on the staff of St. Joseph Mercy Hospital; died September 4, aged 69, of terminal pneumonia due to hypertensive cardiovascular disease.

James Cicero Bramblett, Chickasha, Okla.; Atlanta School of Medicine, 1908; died August 2, aged 67, of cerebral hemorrhage.

Victor Vernon Cameron, Marion, Ind.; Baltimore Medical College, 1899; died September 3, aged 69.

Clarence M. Cheadle, Burnsville, N. C.; Keokuk (Iowa) Medical College, 1898; served during World War I; died September 3, aged 76, of heart disease.

Hugh Tucker Chelf Jr., Culpeper, Va.; University of Virginia Department of Medicine, Charlottesville, 1935; interned at the Mercy Hospital in Cedar Rapids, Iowa; died September 10, aged 37, of coronary occlusion.

James Richard Condon, Spokane, Wash.; Creighton University School of Medicine, Omaha, 1923; member of the American Medical Association; team physician on the athletic staff at Gonzaga University; affiliated with the Sacred Heart Hospital; died September 8, aged 48, of coronary thrombosis.

John Francis Connoles, Wilkes-Barre, Pa.; Jefferson Medical College of Philadelphia, 1906; member of the American Medical Association; died in the Mercy Hospital August 29, aged 62, of cirrhosis of the liver.

Fletcher Lovell Crocker * Pontiac, Ill.; Miami Medical College, Cincinnati, 1891; on the staff of St. James Hospital, where he died August 31, aged 79, of coronary thrombosis.

Edward Anthony Dignam * Rockville, Conn.; Medical College of Virginia, Richmond, 1928; interned at St. Francis Hospital in Hartford, where he was a member of the staff; served a residency at the New York Eye and Ear Infirmary and the Manhattan Eye, Ear and Throat Hospital in New York; on the staff of the Rockville City Hospital; died in Niantic August 26, aged 48, of coronary thrombosis.

Ralph Giddings Dryer, Tucson, Ariz.; University of Tennessee College of Medicine, Memphis, 1931; associated with Thomas-Davis Clinic; district physician and surgeon for the Southern Pacific Railroad; died August 30, aged 39, of coronary disease.

Thomas Eugene Dunnam, Houston, Texas; University of Texas School of Medicine, Galveston, 1912; member of the American Medical Association; served during World War I; died in the Memorial Hospital August 29, aged 60, of myocardial failure.

William Turner Eikner, Denver; Milwaukee Medical College, 1901; died August 24, aged 83, of coronary occlusion.

Irving A. Elson, Canton, Ohio; Western Reserve University Medical Department, Cleveland, 1891; member of the American Medical Association; died August 24, aged 81.

Walter J. Fahrner * Joliet, Ill.; Northwestern University Medical School, Chicago, 1905; on the staff of St. Joseph's Hospital, where he died September 4, aged 63, of incarcerated and strangulated direct inguinal hernia and cystic degeneration of the kidneys.

Andrew Suydam Fritts, Binghamton, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1897; past president of the Broome County Medical Society; on the staff of the Binghamton City Hospital; died August 8, aged 72, of arteriosclerotic heart disease.

Elias Gamrin, Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1915; member of the American Medical Association; interned at the Montefiore Home and Hospital and the Beth Israel Hospital in New York; on the staff of the Jewish Hospital, where he died September 7, aged 55, of coronary thrombosis.

Leroy Thomas Geer, Syracuse, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1901; one of the founders and served on the staff of the Onondaga General Hospital; died September 1, aged 66, of coronary thrombosis.

Zina Leslie Gilding, Vicksburg, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1910; served on the board of education and as village health officer; formerly on the staffs of the Borgess and Bronson hospitals in Kalamazoo and the Franklin Memorial Hospital; died in Schoolcraft September 5, aged 73, of cerebral hemorrhage.

William Arvel Gott, Peoria, Ill.; Chicago Homeopathic Medical College, 1901; member of the American Medical Association; served in the medical corps of the U. S. Army during World War I; died September 18, aged 70, of coronary occlusion.

George Henry Greenwood, Fredericktown, Mo.; Beaumont Hospital Medical College, St. Louis, 1897; past president of the Madison County Medical Society; died in a hospital at Farmington August 29, aged 83, of cerebral hemorrhage.

Milton Jacob Haas & Allentown, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1907; member of the staffs of the Sacred Heart Hospital and the Allentown Hospital, where he died August 26, aged 71, of coronary artery disease.

Walter George Hallstead, Penn Yan, N. Y.; Cornell University Medical College, New York, 1911; served during World War I; health officer; on the staff of the Soldiers and Sailors Memorial Hospital, where he died September 19, aged 58, of cerebral hemorrhage.

Sandy Byars Harrell, Macon, Ga.; University of Nashville (Tenn.) Medical Department, 1888; died August 24, aged 77, of chronic myocarditis.

Daniel D. Hendrickson, Middletown, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1880; past president of the Monmouth County Medical Society; served as school physician and insurance examiner; died August 17, aged 88, of carcinoma of the prostate, acute nephritis and endocarditis.

Harrison Sidney Hickok & Kansas City, Mo.; Omaha Medical College, 1895; an Affiliate Fellow of the American Medical Association; on the staff of the Trinity Lutheran Hospital; died in St. Mary's Hospital, Rochester, Minn., August 24, aged 76, of hemorrhage due to gastric ulcer.

Agnew Hodge Hilsman & Albany, Ga.; Cornell University Medical College, New York, 1899; past president of the Chattahoochee Valley Medical and Surgical Association; member of the Southeastern Surgical Association; fellow of the American College of Surgeons; surgeon to the Phoebe Putney Memorial Hospital; died August 21, aged 69, of pulmonary emphysema.

Harry Wagner Howland, Gaines, Pa.; Baltimore Medical College, 1903; member of the American Medical Association; formerly medical director of Tioga County; for many years a member of the school board; served as surgeon for the Baltimore and Ohio Railroad; died August 2, aged 63, of coronary thrombosis.

Horace Gordon Huey & Homerville, Ga.; Chicago College of Medicine and Surgery, 1915; served as chairman and member of the state board of medical examiners; formerly member of the county and local board of education; vice president of the Empire Banking Company; owner of a hospital bearing his name; died August 25, aged 54, of heart disease.

David Bunyan Jackson, Greer, S. C.; Southern Medical College, Atlanta, 1885; member of the American Medical Association; died August 7, aged 87.

A. Judson James, Houston, Texas; University of Texas School of Medicine, Galveston, 1899; honorary member of the State Medical Association of Texas; member of the American Medical Association; died August 25, aged 84, of cerebral hemorrhage.

William Leroy Kenney, St. Joseph, Mo.; State University of Iowa College of Medicine, Iowa City, 1897; member of the American Medical Association; honorary member of the Missouri State Medical Association; formerly professor of clinical ophthalmology at the Ensworth Medical College and on the faculty of the Central Medical College; served in France during World War I; on the staff of the Missouri Methodist Hospital, where he died August 11, aged 72, of cerebral hemorrhage.

Arthur Charles Kleutgen & Chicago; Northwestern University Medical School, Chicago, 1902; formerly associate professor of medicine at Loyola University School of Medicine; on the staff of the Woodlawn Hospital, where he died September 13, aged 66, of coronary thrombosis and hypertension.

Edward Allen Knowlton & Holyoke, Mass.; Tufts College Medical School, Boston, 1909; fellow of the American College of Surgeons; chairman of the state board of registration in medicine; senior visiting surgeon, Holyoke Hospital; visiting surgeon, Providence Hospital; consulting surgeon to the Belchertown State School, Belchertown; died August 22, aged 62, of cerebral hemorrhage.

Robert Antoine LeTourneau & Chicago; Northwestern University Medical School, Chicago, 1895; an Affiliate Fellow of the American Medical Association and emeritus member of the Illinois State Medical Society; served on the city board of health and on the staffs of the Jackson Park, County and Chicago Baptist hospitals; died September 5, aged 83, of coronary thrombosis and hypertension.

Gustav Adolph Mack, Gallipolis, Ohio; Bellevue Hospital Medical College, New York, 1894; member of the American Medical Association and the Association of Military Surgeons of the United States; served during World War I; captain in the medical reserve corps of the U. S. Army, not on active duty; for several terms county coroner; surgeon for the New York Central Railroad for many years; died August 18, aged 76, of carcinoma of the pancreas.

Charles Marcellus Mashburn & Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1912; specialist certified by the American Board of Pediatrics, Inc.; formerly associate in pediatrics at the Emory University School of Medicine; served during World War I; on the staffs of the Georgia Baptist and Piedmont hospitals; died in the Blackman Sanatorium August 14, aged 55, of chronic pyelitis.

Claude William Mason & Omaha; University of Nebraska College of Medicine, Omaha, 1905; assistant professor of medicine at his alma mater; fellow of the American College of Surgeons; formerly a medical missionary in Siam and China; for many years a member of the board of education, of which he had been past president; on the staffs of the University of Nebraska Hospital, St. Catherine's Hospital and the Immanuel Deaconess Institute, where he died August 4, aged 65, of coronary infarction.

James Henry McCaffrey, Buffalo; Baltimore Medical College, 1898; died in the Sisters Hospital August 30, aged 75, of carcinoma.

Americus Ojeda McMichael, Denver; Drake University Medical Department, Des Moines, 1894; also a graduate in pharmacy; died in St. Luke's Hospital August 12, aged 81, of cerebral hemorrhage and cardiovascular renal disease.

Samuel Albert Miller & Longview, Texas; University of Tennessee Medical Department, Nashville, 1894; died August 28, aged 78, of hypertension and nephritis.

Robert Booth Moore, Little Rock, Ark.; Columbia University College of Physicians and Surgeons, New York, 1914; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; served overseas during World War I; one of the founders and on the staff of the Trinity Hospital; died in the Barnes Hospital, St. Louis, August 12, aged 57, of lymphosarcoma.

Mary Catherine Couch Mora, East Islip, N. Y.; Tufts College Medical School, Boston, 1912; served on the staff of the Central Islip State Hospital in Central Islip; died August 19, aged 55, of cerebral arteriosclerosis.

Lyman Sanderson Osborne, Fitzgerald, Ga.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1878; member of the American Medical Association; honorary member of the Medical Association of Georgia; member of the school board and served as city health officer; for many years physician for the Fitzgerald Cotton Mills; on the staff of the Fitzgerald Hospital; died August 6, aged 90, of senility.

Richard Frederic Lot Ridgway, Allentown, N. J.; Johns Hopkins University School of Medicine, Baltimore, 1906; member of the American Medical Association, American Psychiatric Association and the Medical Society of the State of Pennsylvania; past president of the Dauphin County (Pa.) Medical Society; served as chief physician at the Harrisburg (Pa.) State Hospital; died in the Hospital of the University of Pennsylvania, Philadelphia, August 15, aged 70, of bronchopneumonia and paralysis agitans.

William Roberts & Major, U. S. Army, retired, Washington, D. C.; Georgetown University School of Medicine, Washington, 1894; died April 19, 1944, aged 79, of heart disease.

Louis Hymen Roddy ⊕ Waco, Texas; University of Maryland School of Medicine, 1909; medical examiner for the Selective Service; on the staffs of the Providence Hospital and the Hillcrest Memorial Hospital, where he died August 20, aged 57, of coronary occlusion.

Jacob Rubin, Chicago; Loyola University School of Medicine, Chicago, 1921; member of the American Medical Association; died in the Presbyterian Hospital July 10, aged 55, of coronary disease and hypostatic pneumonia.

Eugene Farmer Sanford, Buchanan, Ga.; Hospital Medical College, Eclectic, Atlanta, 1910; University of Georgia Medical Department, Augusta, 1912; president of the Haralson County Medical Society; member of the American Medical Association; major in the medical corps of the U. S. Army during World War I; served as member of the governor's staff, mayor of Buchanan and member of the city council; died in the Harbin Hospital, Rome, July 26, aged 55, of arteriosclerotic heart disease.

Margaret McPhee Sanford, Boston; Boston University School of Medicine, 1898; died in Billerica August 31, aged 78, of acute myocarditis.

Harry B. Smith, Keo, Ark.; Memphis (Tenn.) Hospital Medical College, 1901; died in Little Rock August 13, aged 70, of chronic nephritis.

Dalton Harris Trepagnier, New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1903; served during World War I and with the U. S. Veterans Bureau; died July 13, aged 66, of coronary thrombosis.

Roy J. Turner, New Baltimore, Mich.; Michigan College of Medicine and Surgery, Detroit, 1906; also a minister; member of the American Medical Association; died July 10, aged 65, of cardiac decompensation.

William Bowers Watts Jr., Claremont, Calif.; University of Georgia Medical Department, Augusta, 1915; member of the American Medical Association and the Arizona State Medical Association; fellow of the American College of Surgeons; served overseas during World War I; formerly chief surgeon at the Miami-Inspiration Hospital in Miami, Ariz.; died in the San Antonio Community Hospital, Upland, July 17, aged 52.

Benjamin B. Wechsler ⊕ Pittsburgh; University of the South Medical Department, Sewanee, Tenn., 1900; died August 17, aged 66, of coronary thrombosis.



LIEUT. COL. ALBERT C. KRUKOWSKI
M. C., A. U. S., 1907-1944



MAJOR CHARLES HENRY WILSON
M. C., A. U. S., 1889-1944



LIEUT. ROBERT JOHN PETTERS
M. C., A. U. S., 1920-1945

Samuel Schaeffer ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1908; on the staffs of the French and Park West hospitals; died August 16, aged 58, of arteriosclerosis.

James W. Williams, Dallas, Texas; University of Louisville (Ky.) Medical Department, 1883; died August 19, aged 86.

Lewis Edward Zins, New York; Illinois Medical College, Chicago, 1898; died July 20, aged 71.

KILLED IN ACTION

Albert Charles Krukowski ⊕ Lieutenant Colonel, M. C., U. S. Army, San Antonio, Texas; McGill University Faculty of Medicine, Montreal, Que., Canada, 1935; interned at the Station Hospital in Fort Sam Houston, San Antonio; U. S. Army Medical School in 1937; entered the medical corps of the U. S. Army on July 1, 1936; promoted to captain on July 1, 1939; after a tour of duty at Station Hospital, Fort Bragg, N. C., served at Corregidor, P. I.; en route from the Philippines in December of 1941 when the Japs attacked the Islands and Pearl Harbor; his ship made port safely in Honolulu on Dec. 17, 1941 whereupon he was immediately assigned to emergency temporary duty at one of the provisional general hospitals there; returned to the United States on June 1, 1942; promoted to major on July 7, 1942; served as executive officer of Percy Jones General Hospital at Battle Creek, Mich., until Oct. 6, 1943, when he was transferred to Camp Swift, Texas, taking command of the 110th Evacuation Hospital; promoted to lieutenant colonel on June 2, 1943; after an intensive training period the unit

went overseas, where it supported the Third U. S. Army in severe combat; died near Bastogne, Belgium, Nov. 7, 1944, aged 37.

Charles Henry Wilson, New York; Tufts College Medical School, Boston, 1913; served eighteen months overseas during World War I and was discharged as a captain; began active duty as a major in the medical corps, Army of the United States, on March 10, 1941; sent to Manila, where he was stationed at the Sternberg General Hospital; after the fall of the Philippines, went through the ordeal of Bataan and Corregidor and became a war prisoner; killed during an air attack in the Pacific area Dec. 15, 1944, aged 55, while being transported aboard a Japanese vessel from the Philippine Islands to Japan.

Robert John Petters, Kenmore, N. Y.; University of Minnesota Medical School, Minneapolis, 1944; interned at the Buffalo General Hospital in Buffalo; began active duty as a first lieutenant in the medical corps, Army of the United States, on Oct. 6, 1944; killed in action in Okinawa, April 19, aged 25.

Correspondence

THE GERMAN UNIVERSITY MEDICAL SCHOOLS DURING THE OCCUPATION

To the Editor:—At the invitation of Major Gen. Morrison C. Stayer, chief of the Public Health and Welfare Division of the U. S. Group Control Council (Germany), I visited during August and September all of the universities in the United States zone of occupation and the majority of those in the other three zones with Major H. M. Rozendaal, Capt. J. S. Lichty and Dr. E. Y. Hartshorne, who are assisting General Stayer in the resumption of German medical education. Their excellent observations as well as the results of several visits to Germany are incorporated in this report.

The German medical schools, which were good in 1912, have not kept pace with the advances in medicine. Except for an occasional specialist who has become famous, the German graduates, even those who took postgraduate work as assistants, are not equal to the average American senior medical student. The reasons are lectures without adequate laboratory and clinical work, too many students with little or no selection, inadequate facilities and faculties which are too small, the members of which do not know modern non-German medicine, whose salaries depend on the number of their students so that they are tempted to encourage an increased enrolment, who also examine their own students and thus may lower standards, and who have too much private practice. Furthermore, the separation of research workers from the medical schools into Kaiser Wilhelm institutes has reduced the productiveness of German medicine so that the medical journals for a generation have been of little scientific value. Unfortunately, most of the Germans do not realize that improvement, reorganization, limitation and supervision of medical education are necessary. As a result, although accurate figures are not available, German physicians, in addition to being poorly trained, are too numerous. The early opening of the medical schools is unnecessary to supply more physicians, but it is desirable in order to maintain continuity of medical education. The German medical schools should be a warning to us not to let our pride in American medical education reach the point at which we are completely satisfied and are unwilling to try to improve it.

Of the seven schools in the United States zone only three have intact physical facilities (Marburg, Heidelberg and Erlangen), but the other four (Giessen, Frankfurt, Munich and Würzburg) have improvised usable accommodations for the hospital care of patients in their communities; their facilities for teaching, however, are inadequate.

The three following programs for the opening of the medical schools have been suggested:

1. Limited denazification without reform: Reopening as they now stand with denazification limited to the removal from the faculties of only those individuals arrested under the orders of the military government or removed by action of the present faculty or its planning committees. This is the plan desired by the Germans themselves. It would permit some individuals, who would ordinarily be removed under existing directives, to continue in their present positions, but it is contrary to the aims of the military government.

2. Complete denazification and reform with active American participation: Complete denazification of the university; rigid selection of students; reorganization of the curriculum to introduce laboratory and bedside teaching in place of the present lecture system; establishment of a uniform, short, practical, final examination to replace the time-consuming *staatsexamen*; the payment of adequate teaching salaries with the university retaining all student fees; provision of supplements to German libraries and laboratories from American sources, and sponsor-

ship of each opened German medical school in the United States zone by some American medical school, which probably, if invited, would rotate some of its faculty members to the German school so that modern teaching methods could be established and maintained. Although the installation and continuance of this program would benefit both the German and American medical schools, it is not practical because of the uncertainty of essential German cooperation and the possible adverse reaction from American and Allied sources.

3. Complete denazification without reform: The denazification of the medical faculties without reorganization of the curriculum, except for the elimination of Nazi ideology and of dangerous research activities.

The third program is the most practical one and is in accord with the aims of the military government, making the Germans work out their own problems after having been completely denazified. Complete denazification automatically removes over 50 per cent of the members of faculties and staffs from the schools, and the result raises the serious problems of adequate personnel and the maintenance of the standards of medical education. Traditionally, the size of the faculty of medicine of each university has been small, numbering from fifty to sixty individuals, some of whom are only nominal. The clinic assistants, who are in addition to the faculty, have no part in the instruction of students even though they are full time employees of the university. Denazification will leave each medical school with several departments in which no individual of the former faculty remains, and the majority of the assistants also are slated for removal from their present positions. Heidelberg and Marburg have been able to conduct postgraduate courses with a denazified teaching staff because a complete curriculum is not required. However, politically acceptable replacements probably can be obtained from the United States zone so that Heidelberg, Marburg and Erlangen should be able to open on November 1 with regular medical semesters.

Major Gen. Morrison C. Stayer, Brig. Gen. James Stevens Simmons and Col. Thomas B. Turner made this survey possible.

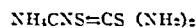
WILBURT C. DAVISON, M.D.,

Duke University,
Durham, N. C.

CHEMICAL COMPOUNDS WITH INHIBITORY EFFECT IN HYPERTHYROIDISM

To the Editor:—Occasionally, discoveries are made in apparently unrelated fields in medicine which under closer examinations can be brought under a common denominator.

While a chief resident at the Montefiore hospital, New York, I was investigating a possible influence of thiouracil on cancer of the thyroid gland. The results, however, were inconclusive. But while examining goitrogenic substances it occurred to me that potassium thiocyanate, known to produce goiter, has a chemical formula similar to thiourea. By substituting the K— by NH_2 —, ammonium thiocyanate, NH_4CNS , is obtained. This chemical compound can be converted into thiourea:



This formula evidently explains the goitrogenic property of potassium thiocyanate.

Other goitrogenic substances include the sulfonamides. It is assumed, almost with certainty, that the bacteriostatic effect of the sulfonamides is due to a substitution of metabolites essential to the growth of the bacteria by substances which differ only slightly. The latter will be taken up by the bacterial organism, but it cannot be metabolized any further, thus bringing bacterial growth to a standstill. Because of their chemical similarity the sulfonamides compete with para-aminobenzoic acid, an essential metabolite (Woods, D. D.: *Brit. J.*

Exper. Path. 21:74 [April] 1940. McIlwain, Henry, and Hawking, Frank: *Lancet* 1:449 [April 10] 1943). A similar process may take place when thiourea is offered to the thyroid gland. Somewhere in the synthesis of thyroxin thiourea substitutes an essential metabolite similar to thiourea in its construction. This unnatural metabolite will be synthesized into a biologic artefact devoid of hormonal function. Therefore the symptoms due to thyroxin will disappear. Unfortunately both thiourea and thiouracil have toxic side effects such as agranulocytosis. The presence of an artificial metabolite in the production of the white blood corpuscles may be the causative factor behind this complication. In my unpublished paper, which was sent to the Lederle Company, Pearl River, N. Y., I suggested that other substances could be used to suppress the activity of an overfunctioning thyroid gland. Compounds of thiourea with side branches similar to sulfathiazole or sulfadiazine or compounds able to replace other metabolites essential to the synthesis are an example.

It may be just speculation, but potassium thiocyanate may block the utilization of an essential metabolite in the synthesis of a vasopressor substance. Here too derivatives of thiocyanates may enhance the vasodepressing effect. Since I am in the Army, investigations along this line are impossible for me to carry out. Therefore I make these suggestions to stimulate further experiments in this field.

A. D. JONAS, Lieutenant, M. C., A. U. S.

TREATMENT OF THE AGONAL STATE AND OF CLINICAL DEATH

To the Editor:—Study of the physiology and therapy of the agonal state in animal experiments and of these problems in man led me to the conclusion that arteriovenous transfusion of blood with epinephrine and glucose added to it, combined with vigorous artificial respiration, are the most important factors in the process of resuscitation. Today we may consider it established that death of the organism does not always take place as a sudden cessation of life. Biologic or irrevocable death is usually preceded by what is termed clinical death diagnosed because of cessation of cardiac and respiratory activity. During this period of clinical death, which does not last more than five or six minutes, the tissues and organs have not had sufficient time to undergo irreversible changes. Clinical death, therefore, is merely a qualitative expression of the process of dying. In a number of cases the transition from life to death can be arrested during this period. Whatever the cause of the agonal state or of clinical death, waning of respiratory function and of circulation of the blood are the major morbid processes which, if allowed to continue, will lead to the death of the organism. The process of dying taking place in the agonal state or in the state of clinical death can be arrested and death averted by reversing these two cardinal functions. I felt that data which I had obtained in animal experiments were applicable to the treatment of wounded soldiers dying from their injuries. Accordingly, I went to the front to work in the field dressing stations.

The major efforts in the method were aimed at the restoration of the cardiovascular function by means of arteriovenous transfusion and of vigorous artificial respiration by means of a bellows. To the blood, which was heated up to 37 C., was added 1 to 2 cc. of 4:1,000 solution of epinephrine hydrochloride and 50 to 100 cc. of 40 per cent solution of glucose. The needle was introduced into the brachial artery and the blood was infused in the centripetal direction, i. e. toward the heart, under a pressure of 180 to 200 mm. of mercury. As soon as a strong contraction of the heart was obtained, blood was infused by way of the brachial vein under pressure of 40 to 60 mm. of mercury. Usually transfusion of 200 to 300 cc. of blood into the artery sufficed to produce the necessary effect,

i. e. restoration of the coronary circulation. The amount of blood introduced into the vein depended on the condition of the patient and varied from 500 to 1,200 cc. Artificial respiration was carried out with the aid of a bellows of the capacity of 0.5 to 2 liters. In the beginning artificial respiration was continued at a rate of 25 to 30 respirations per minute, and later it was reduced to 16 to 20 per minute. The amount of air introduced with each respiration was shown on the scale of the bellows as 1,000 to 1,500 cc. Artificial respiration was continued for some time after the appearance of normal breathing, although the rate was reduced and it was applied with intervals of rest.

The major indication for this therapy is primarily sudden death from such causes as excessive loss of blood, suffocation, agonal state and clinical death in patients suffering from severe injuries to limbs, collapse and the like. I treated, in the course of four months, 51 cases of shock, agonal and preagonal states and clinical death. There were 17 cases of severe shock, 20 cases of agonal state, 10 cases of clinical death and 4 cases of suffocation. In 34 of the 51 cases the treatment preceded proposed surgical intervention, and 31 of these patients were able to undergo such treatment.

The final results are as follows: In 12 of the 51 cases, treatment resulted in permanent effects in men who were regarded as hopeless and who were already in the agonal state or in the state of clinical death. They were evacuated after resuscitation to base hospitals. In 37 other cases the effect was not permanent and the wounded men died later as a result of the grave nature of their injuries. Among patients treated in the state of clinical death, 5 have recovered completely all of their functions—the dead were brought back to life. With 1 exception I did not find any disturbance of the central nervous system in the resuscitated men.

In view of these results, I consider it the task of the doctor to give active treatment to patients in the agonal state and in the state of clinical death. One should not abandon one's efforts at resuscitation even after the cessation of cardiac and respiratory action, especially in cases of sudden death. From this moment on the struggle is difficult but is not hopeless. A heart that has stopped beating can be made to resume its action in a number of cases. Respiration may also be restored, although this is even more difficult. Restoration of the functions of the whole organism follows.

V. NEGOVSKY, M.D., Moscow, U. S. S. R.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in *THE JOURNAL*, Dec. 15, page 1125.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Various Centers, Feb. 4-6. Part III. Various Centers, March. Exec. Sec., Mr. E. S. Elwood, 225 S. Fifteenth St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY & SYPHILOLOGY: *Written.* Group B, April 22. *Oral.* Group A and B, June 6-8. Final date for filing application is March 1. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Chicago, May 27. Final date for filing application is Feb. 1. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago 12.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Jan. 18-22 and New York, April 10-13, San Francisco, June 22-25, and Chicago, Oct. 9-12. Sec., Dr. S. Judd Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF OTOLARYNGOLOGY: Spring 1946. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: Chicago, May 24-25. Final date for filing application is February 1946. Sec., Dr. Walter Freeman, 1023 Connecticut Ave., N. W., Washington 6, D. C.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February 1946. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Pathology, Ann Arbor, Mich.

21:821-1030 (Sept.) 1945

- Experimental Studies in Calcification: I. Effect of Rachtogenic Diet on Dental Tissues of White Rat. J. P. Weimann and I. Schour.—p. 821.
Id.: II. Effect of Rachtogenic Diet on Alveolar Bone of White Rat. J. P. Weimann and I. Schour.—p. 833.
Id.: III. Effect of Parathyroid Hormone on Alveolar Bone and Teeth of Normal and Rachtic Rat. J. P. Weimann and I. Schour.—p. 857.
Study of Circulation of Spleen in Sicklemia and Sick Cell Anemia. W. J. Tomlinson.—p. 877.
Microscopic Diagnosis of Pulmonary Lymphoma. W. S. Hartroft.—p. 889.
Visceral Lesions in Measles, with Report of Koplak Spots in Colon. Elizabeth U. Corbett.—p. 905.
*Extragenital Choriocarcinoma in Male. T. C. Laipply and R. A. Shipley.—p. 921.
Studies on Ameboid Motion and Secretion of Motor End Plates: VI. Pathologic Effects of Traumatic Shock on Motor and Sensory Nerve Endings in Skeletal Muscle of Unanesthetized Rats in Noble Collip Drum. E. J. Carey, L. C. Massopust, W. Zeit, E. Haushalter, J. Hamel and R. Jeub.—p. 935.
Cellular Reactions to Mycolic Acids. B. Gerstl, R. Tennant and O. Pelzman.—p. 1007.
Experimental Studies in Cardiovascular Pathology: XI. Thesauriosis and Atheromatosis Produced in Dogs by Repeated Intravenous Injection of Solutions of Sodium Cellulose Glycollate. W. C. Hueper.—p. 1021.

Extragenital Choriocarcinoma in Male.—Laipply and Shipley state that if strict criteria are maintained and if negative serial block sections of the testes are considered essential, only 7 cases of extragenital choriocarcinoma in the male recorded in the literature furnish conclusive proof of an extragenital origin. To these Laipply and Shipley add their own case, making a total of 8 unquestionably proved cases of primary extragenital choriocarcinoma in the male. They report that a complex teratoma originating in the thorax of a boy aged 13 years was removed surgically. He died seven years later of either a recurrence or an independent teratoma with choriocarcinoma in the tumor and widespread choriocarcinomatous metastases. Gynecomastia, testicular atrophy and hyperplasia of the interstitial cells of Leydig were associated with the tumor. Endocrine alterations resembled those of pregnancy.

Anesthesiology, New York

6:449-560 (Sept.) 1945

- Hazard of Anoxia During Nitrous Oxide Anesthesia. A. L. Barach and E. A. Roventine.—p. 449.
*Clinical Studies on Morphine. I. Immediate Effect of Morphine Administered Intravenously and Intramuscularly on Respiration of Normal Man. R. D. Dripps and J. H. Comroe Jr.—p. 462.
Spinal Analgesia with Solutions of Procaine and Epinephrine: Preliminary Report of 108 Cases. M. D. Prickett, E. G. Gross and S. C. Cullen.—p. 469.
Intubation Without Laryngoscopy. F. Hudson.—p. 476.
*Influence of Liver and Kidney on Duration of Anesthesia Produced by Barbiturates. G. M. C. Masson and Eleanor Beland.—p. 483.
Endotracheal Anesthesia in Combat Zone. F. W. Bowers.—p. 492.
Effect of Variations of Intratracheal Pressure and Anesthetic Mixture on Arterial Blood Oxygen (Experimental Study). T. F. Thornton, R. C. Martin, H. M. Livingstone and W. E. Adams.—p. 498.
Roentgenologic Study of Male Sacrum as Aid in Caudal Analgesia. P. A. Robin and V. J. Collins.—p. 505.
Ether Allergy: Case Report. H. B. Stein.—p. 515.
Hemiplegia Following Ether Anesthesia. J. E. Pisetsky.—p. 522.

Immediate Effect of Morphine on Respiration.—Dripps and Comroe administered morphine sulfate intravenously to 26 persons (3 female, 23 male) whose ages ranged from 19 to 88 years and whose weights ranged from 42.2 to 87.4 Kg. Six persons over the age of 70 received 10 mg. ($\frac{1}{4}$ grain); the others received 15 mg. ($\frac{1}{4}$ grain). Twenty-three persons

(7 female and 16 male) received morphine intramuscularly; their ages varied from 20 to 88 years and their weights from 47.7 to 99.5 Kg. Eleven of these were given 20 mg. ($\frac{1}{2}$ grain), 2 received 15 mg. ($\frac{3}{4}$ grain), 1 received 12 mg. ($\frac{3}{8}$ grain) and 9 received 10 mg. ($\frac{1}{6}$ grain). Intravenous injection of morphine produced maximal depressant effects within three to seven minutes in the majority of instances. Respiratory minute volume, rate and tidal exchange were diminished. The maximal respiratory depression following morphine is approximately the same whether the morphine is administered intravenously or intramuscularly. Morphine given intravenously appears to be safer because the full degree of respiratory depression becomes apparent within three to seven minutes. Following intramuscular or subcutaneous injection of morphine, the depression may gradually deepen over a period of thirty to ninety or more minutes. If the patient given intravenous morphine is watched carefully over a ten minute period after injection, the maximal depression will usually be noted. When morphine is injected intravenously as preoperative medication before general anesthesia, induction of general anesthesia should be delayed ten minutes after the injection until the maximal depression has been noted. If this precaution is observed, the intravenous route is a useful one prior to general anesthesia, since it enables the anesthetist to avoid the annoying combination of increasing respiratory depression from morphine and the anesthetic agent.

Liver and Kidney in Anesthesia Produced by Barbiturates.—Masson and Beland used partially hepatectomized or completely nephrectomized animals to determine the relationship between the duration of action of barbiturates and the site of their detoxification. Twenty-nine compounds were investigated in experiments on rats. For each compound the degree of detoxification (inactivation or elimination) in the liver or the kidney was represented by an "index of detoxification," or the ratio of the average duration of anesthesia of control animals to the average duration of anesthesia of experimental animals. The authors suggest that the barbiturates be classified in four groups according to the site of their detoxification. They include in group 1 those detoxified mainly in the kidney: barbital and phenobarbital. Group 2 includes those detoxified mainly in the liver: ipral, amytal, pentobarbital sodium, ortal, alurate, nostal, seconal, allyl pental, evipal, thioethamyl. Those detoxified approximately equally in the liver and kidney—neonal, delvinal, planodorn and dial—are placed in group 3. Group 4 includes those possibly detoxified in all the tissues of the body but not to any great extent in the liver or kidney; that is, pentothal, propyl 1-methylallyl and allyl 1-methylallyl thiobarbiturates.

Archives of Dermatology and Syphilology, Chicago

52:75-146 (Aug.) 1945

- Cutaneous Diseases in South Pacific: Observations Among Military Forces. W. W. Duemling.—p. 75.
*Vincent's Disease of Skin. A. Strickler.—p. 87.
Lupus Erythematosus: Treatment with Oxophenarsine Hydrochloride. L. C. Goldberg.—p. 89.
Erythema Multiforme: Report of Case of Severe Erythema Multiforme with Involvement of Mucous Membranes Treated with Penicillin. H. C. Robinson.—p. 91.
Allergic Reactions During Administration of Penicillin. J. H. Lamb.—p. 93.
Penetration of Surface Tissues with Copper by Iontophoresis: Penetration with Organic and Inorganic Copper Salts and Use of Detergents in Iontophoresis.—p. 96.
White Cross Striae of Finger Nails Following Cardiac Infarction. E. Urbach.—p. 106.
Classification of Tuberculosis of Skin. H. E. Michelson and C. W. Lavmon.—p. 108.
Extragenital Syphilitic Infection in Negroes. H. H. Hazen.—p. 114.

Vincent's Disease of Skin.—A man aged 23 complained that his feet had been painful for the past two months. Walking was difficult, and the feet stung whenever anything touched them. There was a pronounced fetid odor from the feet, swelling of the paronychia tissue, purulent discharge and loosening of nails from the nail bed. On the left foot between the second and third interspaces there was an ulcer. The remaining interspaces showed crusting and desquamation. The lips were dry and showed slight fissuring. There was an ulceration at the commissures. The gums were swollen, painful and reddened; the tongue presented fissuring, with areas of denudation. The tonsillar and the pharyngeal mucosa was reddened and con-

gested. Examination revealed a large number of Vincent's spirilla and fusiform spirilla in the gums and a moderate number of the Vincent symbiotic organisms in the tonsillar and pharyngeal areas. In smears from the ulceration at the commissures of the mouth and in the lesion of the interspaces of the toes (ulcer) a moderate number of Vincent's spirilla and fusiform bacilli were found. The local treatment as described by Strickler consisted in application of sodium perborate to the feet and 10 per cent neosarsphenamine in glycerin to the gums. The patient remained in the hospital for thirty-six days and was discharged with the feet free from lesions.

Arkansas Medical Society Journal, Fort Smith

42:69-88 (Sept.) 1945

American Medicine Tomorrow. M. F. Cahal.—p. 69.
Modern Concepts of Cardiovascular Disease. C. T. Chamberlain.—p. 76.

42:89-105 (Oct.) 1945

War Neuroses Among Returning Soldiers. A. C. Kolb.—p. 89.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

4:369-490 (Oct.) 1945

Clinical Observations on Early Trench Foot. C. A. Ragan and A. E. Schechter.—p. 434.
Is Gas Gangrene a Misnomer? J. F. Krumm.—p. 440.
Early Treatment of Combined Bone and Nerve Lesions. R. G. Spurling.—p. 444.
Insulin for Rehabilitation. H. M. Fox.—p. 447.
Second Year End Result of Arthroplasties of Knee. L. J. Willien.—p. 452.
Persistent Hepatitis in Patients Returning from Overseas. A. P. Fishman.—p. 457.
Myocardial Complications of Cutaneous Diphtheria. C. F. Kay and C. S. Livingood.—p. 462.
Caterpillar Dermatitis. S. Berkowitz.—p. 464.

California and Western Medicine, San Francisco

63:107-154 (Sept.) 1945

Recent Observations on Virus Pneumonia. M. D. Eaton.—p. 113.
Current Concepts in Varicose Vein Therapy. N. A. Sapiro.—p. 116.
Rheumatic Fever: Its Recognition. G. C. Griffith.—p. 119.
Rheumatic Fever Case Finding Program in Two California Counties. Helen M. Johnson.—p. 123.
Quinidine: In Treatment of Heart Disease. S. A. Weisman.—p. 125.
Short Wave Radiations: Mechanism of Anti-Inflammatory Effect. L. G. Jacobs.—p. 127.
What Can Be Done for the Deafened Today? H. P. House.—p. 130.

Canadian Journal of Public Health, Toronto

36:341-384 (Sept.) 1945

*Diphtheria Among Schick Negative Persons in Halifax, Nova Scotia. R. J. Gibbons.—p. 341.
School Medical Services. T. C. Harold and J. M. Hershey.—p. 349.
Sources of Error in Dietary Surveys. E. W. McHenry, Helen P. Ferguson and J. Gurland.—p. 353.
Cases of Exposure to Methyl Bromide Vapors. F. J. Tourangeau and S. R. Plamondon.—p. 362.
Mortality Reductions in Ontario, 1900-1942: III. Age Groups of 50 and Over. N. E. McKinnon.—p. 368.

Diphtheria Among Schick Negative Persons.—Gibbons reviews 1,028 cases of diphtheria admitted to the Infectious Diseases Hospital in Halifax, Nova Scotia. There were 44 deaths. Death occurred in a child who had shown a primary Schick negative test two years and five months previously and in another child who had received three doses of fluid toxoid six months previously. Twenty-one per cent of the cases of diphtheria occurred in persons who had shown a primary negative Schick test or who had had three doses of toxoid within the previous three years. When the incidence rates in two groups, Schick negative (natural or induced by toxoid) and others, are calculated, it is found that the rate in the Schick negative group is approximately one tenth of the rate in the unprotected population.

Delaware State Medical Journal, Wilmington

17:171-186 (Sept.) 1945

Oral Penicillin: Review of Literature and Preliminary Report. J. W. Howard and E. G. Scott.—p. 171.
Psychogenic Disturbances of Hearing and Vision. L. S. London.—p. 174.
Myelitis Complicating Varicella. A. H. Williams.—p. 178.

Journal of Clin. Endocrinology, Springfield, Ill.

5:291-326 (Sept.) 1945

Analysis of Human Urines for Steroid Substances. G. Pincus.—p. 291.
Estrogen Treatment of Stricture of Rectum Due to Lymphogranuloma Venereum. A. D. Seley, S. Vernick and H. Goldman.—p. 301.
Treatment of Angina Pectoris with Testosterone Propionate. S. Waldman.—p. 305.

Journal of Neurosurgery, Springfield, Ill.

2:365-462 (Sept.) 1945

Penetrating Brain Wounds: Analysis of 342 Cases. W. G. Haynes.—p. 365.
Reduction of Hernia Cerebri by Tantalum Cranioplasty: Preliminary Report. F. A. Carmichael Jr.—p. 379.
Tight Dural Closure with Pedicled Graft in Wounds of Brain. A. D. Ecker.—p. 384.
*Observations on Infection in Penetrating Wounds of Head. S. N. Rowe and O. A. Turner.—p. 391.
*New Uses of Tantalum in Nerve Suture, Control of Neuroma Formation, and Prevention of Regeneration After Thoracic Sympathectomy: Illustration of Technical Procedures. J. C. White and H. Hamlin.—p. 402.
Hemostasis in Neurosurgery. R. U. Light.—p. 414.
Surgical Investigation of New Absorbable Sponge Derived from Gelatin for Use in Hemostasis. R. U. Light and Hazel R. Prentice.—p. 435.

Infection in Penetrating Wounds of Head.—Rowe and Turner present observations on a large series of battle casualties seen in a neurosurgical center. Approximately 15 per cent of the head wounds showed infection. In most instances of infection the wound must be widely reopened to prevent the development of pockets of pus and extension of the infection to deeper structures. Penicillin has been effectively employed locally in solution (10,000 units per cubic centimeter of isotonic solution of sodium chloride) through a Dakin tube laid in the wound and carried out through the dressing. This method permits the frequent instillation of the drug (usually 10,000 units every three hours). It has the further advantages of permitting aspiration of pus from the wound before each instillation. The tube should not remain in place for more than one week. Dry penicillin mixed with sulfanilamide crystals (5 to 10,000 units of penicillin to each gram of sulfanilamide) has been dusted into the wound as an alternative method of local application. Meningitis is one of the most serious complications of penetrating wounds of the head. It has occurred in this series in approximately 4.5 per cent of the cases. The clinical picture produced by early meningitis following a penetrating wound of the head is not always clearcut. Sometimes there is relatively little febrile reaction and the patient may not appear acutely ill. It is of primary importance to eliminate the source of the infection. Wide opening of an infected wound, removal of a necrotic cerebral fungus and repair of a cerebrospinal fluid leak constitute active therapy directed at the seat of the infection. Second in importance is the maintenance of adequate chemotherapy. The effectiveness of the treatment of meningitis depends to a great extent on the causative organism. If it is penicillin resistant the prognosis becomes much worse. Mixed infections that included organisms of the colon group produced the most dangerous meningeal infections. A striking percentage of brain abscesses have been clinically silent, many reaching considerable size with little evidence of increased intracranial pressure. Complete evacuation of the abscess in combination with local and systemic chemotherapy has proved effective in most cases.

Tantalum in Nerve Suture.—White and Hamlin point out that tantalum has the advantages of easy processing into plates, thin sheets or wire at the factory and of convenient sterilization, drilling, shaping or cutting in the operating room. It is ideal for nerve suture, as it can be drawn to extreme thinness (0.003 inch), ties with ease and can also be subsequently visualized in the x-ray as a marker of the position of the divided nerve ends. In sheets 0.001 inch thick it can be cut and rolled to fit the end of a nerve stump from which a painful neuroma has been removed. By crushing the distal open end a snugly fitting cap is formed which effectively prevents reformation of the neuroma. The same procedure is recommended for sealing off the cephalic stump of the divided thoracic ganglionated chain in preganglionic sympathetic denervation of the upper extremity. Annealed rolls of sheet tantalum (0.00075 inch) constitute a distinct improvement over the former use of foil in the protection of nerve anastomoses. Unlike the finer foil, these sheets show no tendency to crumple, and their use is of value under special circumstances which are often encountered in wartime injuries.

Public Health Reports, Washington, D. C.

60:1069-1100 (Sept. 14) 1945

Physical Impairments of Members of Low Income Farm Families—11,490 Persons in 2,477 Farm Security Administration Borrower Families, 1940: V. Defects of Nasal Septum; and Chronic Respiratory Affections, Exclusive of Diseased Tonsils. Mary Gover and J. B. Yaukey.—p. 1069.

*Effect of Topically Applied Sodium Fluoride on Dental Caries Experience: II. Report of Findings for Second Study Year. J. W. Knutson and W. D. Armstrong.—p. 1085.

60:1101-1128 (Sept. 21) 1945

Studies on Pharmacologic Action and Pathology of Alphanaphthylthiourea (ANTU): I. Pharmacology. W. T. McClosky and M. I. Smith.—p. 1101.

Note on Physician Time per Patient in Private Practice. B. M. Davis.—p. 1113.

Sodium Fluoride and Dental Caries.—Knutson and Armstrong present data on the incidence of dental caries in the permanent teeth of a treated group of children and a control group of children for the second year of a longitudinal study. The ages of the children at the time the study was begun varied from 7 to 15 years. The treated group, originally consisting of 337 children, received topical fluoride applications to the teeth in the left quadrants of the mouth. The teeth in the right or untreated mouth quadrants served as direct controls. An additional group of children, originally consisting of 392 children enrolled in the same schools as the treated children, did not receive fluoride treatments and served as additional controls. During an eight week period each child in the study groups received dental prophylaxis and a detailed dental examination. In addition the children in the treated group received from seven to fifteen topical applications of fluoride to the teeth in the left quadrants of the mouth. The fluoride treatment procedure consisted in isolation of the teeth with cotton rolls, drying the teeth with compressed air and wetting the crown surfaces of the teeth with 2 per cent sodium fluoride solution. The applied solution was allowed to dry in air for approximately four minutes. Analysis of the results for the two year period ended in May 1944 indicates that during both these time periods the initial caries attack on fluoride treated teeth continued to be approximately 40 per cent less than on untreated teeth. Furthermore, not only did the number of additional tooth surfaces attacked in previously decayed teeth continue to be less in treated than in untreated carious teeth, but the magnitude of the difference was appreciably increased during the second year.

Radiology, Syracuse, N. Y.

45:213-318 (Sept.) 1945

Radiation Necrosis of Calvarium: Report of 5 Cases. J. D. Camp and R. D. Moreton.—p. 213.

*Arachnodactyly. A. S. Parker and H. F. Hare.—p. 220.

Degenerative Effects of Large Doses of Roentgen Rays on Human Brain. T. J. Wachowski and H. Chenuault.—p. 227.

*Roentgen Therapy of Primary Neoplasms of Brain and Brain Stem: Preliminary Report for Four Year Period Jan. 1, 1939-Dec. 31, 1943, with Follow-Up as of Sept. 1, 1944. C. B. Peirce, W. V. Cone, A. E. Elvidge and J. G. Tye.—p. 247.

Neurosurgical Procedures for Relief of Pain in Advanced Cancer. W. G. Crutchfield.—p. 253.

Roentgen Appearance of Lobar and Segmental Collapse of Lung. V. Collapse of Right Middle Lobe. L. L. Robbins and C. H. Hale.—p. 260.

Intestinal Obstruction: Further Experiences in Use of Flat Abdominal Films. N. S. Zeitlin and M. S. Mazel.—p. 267.

Radiology of Chest: Its Evaluation in Prevention of Tuberculosis. J. F. Brailsford.—p. 278.

Vertebra Plana (Calvé): Report of Case. A. F. Massaro.—p. 284.

Metallic Foreign Bodies in Gallbladder: Case Report. M. S. Donovan.—p. 292.

Arachnodactyly.—During the past year Parker and Hare have seen 4 patients with arachnodactyly. Three were members of the same family, a father and 2 daughters. The diagnosis of arachnodactyly can be established by a survey of the patient provided the physician is conscious of the essential features of this syndrome. The patient is tall and appears awkward, with excessively long arms and legs, long, thin, spider-like hands, meager subcutaneous fat, underdeveloped atonic musculature and often ectopia lentis. The emaciation accentuates the bony landmarks, and these in turn serve to emphasize the disproportionate length of the extremities as compared to the trunk. The delicately elongated, spider-like fingers give this syndrome its name. The feet and toes are likewise long and

slender. Deformities of the joints are common. Pes planus, contractures, hammer toes, webbing and sometimes abnormally mobile patellas occur. The frequently associated scoliosis, kyphosis, winged scapula and deformities of the sternum are considered to be the result of the laxity of the ligaments and atonic musculature. The skull of the arachnodactylic patient tends to be dolichocephalic with prominent supraorbital ridges, frontal bossing, a pointed chin and either a prominent or a broad, somewhat flattened nose. The face is usually drawn, wrinkled and old looking, often with a melancholy expression. The ears are frequently enlarged. Approximately 50 per cent of the patients have a partial dislocation of the lens, usually upward. Congenital heart anomalies frequently accompany the disease and consist mainly of a patent foramen ovale and other interauricular septal defects. In the infant or rapidly growing child, especially without eye abnormalities, this syndrome may be mistaken for rickets. The abnormally long and slender extremities, the absence of flared epiphyses, normal blood calcium and phosphorus, and perhaps obscure anomalies in the parents, should lead one to suspect arachnodactyly. The symptoms of weakness, fatigue, moderate dyspnea on exertion, malnutrition and a coarse systolic murmur in early childhood may focus attention on the cardiovascular system to the exclusion of what appear to be lesser anomalies. The erroneous diagnosis of rheumatic heart disease with malnutrition and rachitic stigmas may be made.

Roentgen Therapy of Neoplasms of Brain.—Peirce and his associates treated primary neoplasms of the brain stem with radiation. For a time a conservative program was followed. This consisted in several series of 3,000 to 6,000 roentgens (in air) divided among several ports at three month intervals until the desired total was reached. So little constitutional reaction was encountered that the authors now commonly administer total doses of 10,000 to 15,000 roentgens (in air) at 50 cm. focus skin distance with the Thoraeus filter, the half value layer being 2 mm. of copper. Filtration of 1 mm. of copper and 1 mm. of aluminum has been used occasionally. Definite clinical improvement was effected by roentgen therapy of primary malignant neoplasms of the brain and brain stem. Twenty-five of 60 patients with complete follow-up over the past four years are either alive and well or alive and well save for residual symptoms. No deleterious effects due to the roentgen therapy have been observed in the series. Primary regrowth of hair has been excellent. No late degenerative changes have been observed following total tumor doses of 15,000 roentgens. Glioblastoma multiforme continues to show a high mortality rate despite increasingly large doses of roentgen radiation. Tumor doses in excess of 7,500 roentgens will be required. The effect on astrocytoma is not as great as would be expected, but this should not discourage treatment similar to that recommended for glioblastoma.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

53:301-340 (Sept.) 1945

Ectopic Pregnancy. G. C. Schaeffer.—p. 301.

*Thrombophlebitis of Cubital Veins in Blood Donors. C. M. Zukerman.—p. 311.

Variations and Anomalies of Biliary Duct System and Its Associated Blood Supply. G. F. Osler and R. S. Dow.—p. 316.

Gastric Adenomas: Pathologic Study. J. H. Rieniets and A. C. Broders.—p. 322.

Thrombophlebitis of Cubital Veins in Blood Donors.

—In approximately 285,000 venipunctures performed at the Blood Donor Center at Chicago, thrombophlebitis in the cubital veins following venesection occurred in 12 instances. The predisposing factors to this complication appear to be trauma to the vein wall, slowing of the blood flow by application of a circular bandage, hematoma, systemic reaction, acute flexion of the forearm and straining of the arm during exercise following the venipuncture. Eleven cases occurred in females and 1 case in a male. The best preventive measures appear to be careful venipuncture technic, immediate discontinuance of the bleeding if hematoma develops or the donor complains of the needle causing discomfort and preventing the donor from flexing acutely his forearm after venipuncture. A circular bandage should not be applied as a dressing. Disability following this complication averaged approximately four months.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

39:49-76 (April & July) 1945

- Radiotherapy in Inoperable Cases of Cancer of Bronchus. G. Hilton.—p. 51.
Comparison of Two Types of Tuberculin Patch Test. H. Climie.—p. 61.
Dust Diseases and Compensation: Some Personal Experiences. A. Meiklejohn.—p. 63.

Irish Journal of Medical Science, Dublin

232:101-132 (April) 1945

- Thoracoplasty: Review. J. H. Coolican.—p. 101.
Sulfonamide Resistant Gonorrhea in Male. B. Solomons Jr.—p. 106.
Diphtheria Prophylaxis in Diphtheria Free Districts. J. B. O'Regan.—p. 117.
Salmonella Organisms in Unusual Sites. W. P. O'Callaghan.—p. 123.

South African Journal Medical Sciences, Johannesburg

10:35-68 (June) 1945

- Anatomy of South African Negro Larynx. P. H. Boshoff.—p. 35.
Pharmacologic Actions of Cassine Croceum DC and Mundelia Suberosa Benth. N. Sapeika.—p. 51.
Modified Liver Aspiration Biopsy Apparatus and Technic, with Special Reference to Its Clinical Applications as Assessed by 500 Biopsies. T. Gillman and J. Gillman, with technical assistance of J. G. Bryden.—p. 53.

Acta Medica Scandinavica, Stockholm

120:195-406 (March 17) 1945. Partial Index

- Kidney Function and Renal Clearances of Some Sulfonamide Derivatives. O. Lindahl and B. Josephson.—p. 195.
Normal Excretion of Urinary Constituents of Low Tubular Reabsorbability, Together with Remarks Concerning Variability of Glomerular Filtration. G. Ekehorn.—p. 227.
*Pressor Activity in Urine in Hypertension. U. S. von Euler and T. Sjöstrand.—p. 276.
Ulcer and Wartime: Study of Ulcer Cases at Serafimer Hospital in Recent Years. T. Sällström.—p. 288.
*Is There Primary Acquired Hemolytic Jaundice? Communication of Supposed Case and Some Investigations on Erythrocytes. A. Kirkegaard and Gertrud Kirkegaard.—p. 305.
Emphysema of Lungs: Its Symptoms and Relations to Other Diseases. H. Heckscher.—p. 349.
Leptospirosis Sejroe: Clinical Survey Based on 29 Cases. O. P. Nielsen and E. Hertel.—p. 384.

Pressor Activity in Urine.—Euler and Sjöstrand prepared ether extracts of urine from 37 patients with hypertension, from 59 patients with various diseases but with normal blood pressure, and from normal persons who were known to be non-smokers. The pressor activity of these urine extracts was tested on the blood pressure of cats. The presence of pressor substances in the urine from healthy persons was confirmed. The pressor activity of urine from patients with various diseases but with normal blood pressure did not differ significantly from that of normal persons. There was a statistically lower content of pressor activity in the urine from patients with hypertension. In 3 cases of chronic nephritis the amount of pressor substances was so low that it could not be determined. It may be considered as established that urine from hypertensive patients does not contain more pressor activity than urine from persons with normal blood pressure but actually may contain less. The pressor activity of urine was given in terms of isomylamine hydrochloride, which has generally been assumed to account for the pressor action of urine. Experiments carried out by the authors suggest that this substance may not be wholly responsible for the effect. In a few cases the action of isomylamine was diminished or even suppressed by cocaine, but in most cases the effect was unchanged.

Primary Acquired Hemolytic Jaundice.—The Kirkegaards consider primary acquired hemolytic jaundice as a hemolytic anemia associated with jaundice without a hereditary factor and without any other underlying disorder. Sixty-nine cases with a negative family history have been collected from the literature; in 11 of these cases the examination of the blood of the families gave negative results. In these patients no other fundamental disorder such as infection, intoxication and disease of the blood was found to suggest that the acquired hemolytic jaundice is secondary to or symptomatic of such a disorder.

In the authors' case of acquired hemolytic jaundice, as well as in 69 cases in the literature, it has not been possible to demonstrate any underlying disorder. Although it is not possible to give a valid proof of the occurrence of a primary acquired hemolytic jaundice, the authors believe that it is justifiable to consider the acquired form as an independent disorder.

120:407-525 (March 22) 1945

- Normal Esterases and Pancreatic Lipase in Blood: Study with New Chemical and Clinical Methods (Second Secretin Test). H. Lagerlöf.—p. 407.
Histopathology of Liver in Infectious Mononucleosis Complicated by Jaundice, Investigated by Aspiration Biopsy. J. Bang and O. Wanscher.—p. 437.
Investigations on Use of Phycomyces Method for Estimation of Vitamin B₁ in Blood. H. O. Bang.—p. 447.
Oscillometric Studies on Change of Sensitivity of Oscillometer at Different Pressures and on Influence of State of Contraction of Arterial Wall on Oscillometric Curve. B. C. Christensen.—p. 474.
*Studies on Hyperventilation: I. Influence of Carbon Dioxide Tension in Arterial Blood on State of Contraction of Large Arteries in Man. B. C. Christensen.—p. 485.
Clinical Study of Polycythemia. I. M. Hirvonen.—p. 491.

Hyperventilation Studies.—Christensen made oscillometric determination on 6 normal persons under different types of ventilation. The experiments showed that ventilation favoring release of carbon dioxide from the blood brings about a constriction of the large arteries of the extremities. The change in the shape of the oscillometric curve occurred in all cases long before the appearance of subjective symptoms of acapnia. In none of the experiments was apnea observed after the hyperventilation, though in some of the cases there appeared symptoms of acapnia during the hyperventilation. Hyperventilation experiments were carried out on the same persons and in the same manner as the hyperventilation experiments. In none of the experiments did there occur any flattening of the oscillometric curve. A slight, involuntary hyperventilation was revealed in a few cases. Additional oscillometric measurements were made on 3 persons with severe anemia resulting in hyperpnea. These patients presented a distinctly flattened oscillometric curve associated with normal arterial pressure. Gradually, as the anemia and the hyperpnea subsided, the oscillometric curve became normal. The author believes that the state of contraction of the arteries is a fine indicator of carbon dioxide tension of the arterial blood.

120:527-614 (April 20) 1945. Partial Index

- Effect of Oxygen Want and Conditions for Its Occurrence in Chronic Disorders of Lung. G. Birath.—p. 527.
*Felt's Syndrome: Splenomegaly, Leukopenia and Chronic Polyarthrititis; Familial Occurrence. J. Zimmer.—p. 543.
Clinical Study of Polycythemia: II. M. Hirvonen.—p. 568.

Felt's Syndrome.—Zimmer reports the occurrence of Felt's syndrome in a woman aged 30. A sister of the patient presented a similar clinical syndrome. In her immediate family there were several persons with rheumatic fever. The patient presented the typical triad of chronic polyarthrititis, leukopenia with granulocytopenia and enlarged spleen. The arthritis began three and a half years earlier in association with a nonspecific inflammation of the jaw. Sulfanilamide had been administered. The hyperplastic bone marrow showed arrested maturation of the granulocytes after the metamyelocyte phase. There was no generalized hypertrophy of the lymph nodes. Considerable loss of weight had occurred in recent years. Treatment with extract of liver, iron in large doses, a course of arsenic, local application of roentgen rays to the splenic region and blood transfusion proved ineffective. The effect of splenectomy was striking. The patient's temperature became normal on the second day after the operation. Leukocytosis and thrombocytosis developed. Arrest of maturation was immediately relieved. The patient regained her normal weight and returned to work on a farm. Granulocytopenia in predisposed persons with polyarthrititis may present the clinical picture of Felt's syndrome. The disposition depends on an endogenous constitutional factor, which is suggested by the occurrence of Felt's syndrome in one of the sisters of the patient. Even if a direct morbid condition of the bone marrow cannot be excluded, a malfunction of the spleen may be a factor of great importance in the changes in the leukopoiesis (granulocytopenia) and the occurrence of the actual syndrome. This concept is supported by the complete recovery which took place after splenectomy.

Book Notices

Virus as Organism: Evolutionary and Ecological Aspects of Some Human Virus Diseases. By Frank MacFarlane Burnet, M.D., F.R.S., Director, Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne, Australia. Harvard University, the Edward K. Dunham Lectures for the Promotion of the Medical Sciences, 1944. Harvard University Monographs in Medicine and Public Health [Number 8]. Cloth. Price, \$2. Pp. 134. Cambridge, Mass.: Harvard University Press; London: Oxford University Press, 1945.

This compact little book, which can easily be carried about in one's pocket, is full of provocative and digestible thoughts about the more important virus diseases of man. These thoughts were presented in the Edward K. Dunham Lectures given at Harvard University in 1944 by Dr. Burnet of Melbourne, Australia. He hails a long way from Cambridge, Mass., or for that matter from any part of America, but is no stranger to American students of virus disease or to others who have followed his work and perhaps read his previous book, published in 1940, on "The Biological Aspects of Infectious Disease." In the previous book, as in this one, Dr. Burnet goes to some pains to point out that the study of infectious disease in general, and virus disease in particular, is such an important aspect of human life that it is worth while trying to understand how it falls into the general scheme of things. He believes that there is plenty of room for further coordination with other biologic fields.

Not many people can do this, but Dr. Burnet combines the happy faculty of being a scientist of the first rank and interpreter of the implications of what he has learned and found. The world would be a happier place if there were more individuals of this kind.

Six representative groups of viruses all well known to the author are discussed each as familiar entities. They are presented not as noxious agents or disease-producing agents per se but as agents which perhaps will continue to survive by virtue of their capacity to act like any other biologic agent, namely to adjust to their environment through evolution and change. In developing this theme Dr. Burnet believes that viruses are micro-organisms which have evolved by parasitic degeneration from larger micro-organisms, many of them in all probability bacteria. Their behavior is interpreted in terms of biologic variation or mutations when the environment is such as to favor the survival of the variant over the original form. Within this biologic pattern it is necessary to consider the effect on the virus resulting from its transfer from one host to another, and with it goes the suggestion that in the past all or nearly all of the known virus diseases of man might have been originally derived from animal infections.

The book is a prize for the shelves of the bacteriologist, the virologist and the epidemiologist and, in fact, any who are interested in the whys and wherefores of infectious disease.

The Road to Recovery from Illness: A Study of Convalescent Homes Serving New York City. Prepared by Elizabeth G. Gardiner and Francisca K. Thomas for the Committee on Convalescent Care Practice. Paper. Pp. 107. New York: Hospital Council of Greater New York, [n. d.].

One of the major adjustments with which the medical profession is confronted, both in private practice and in hospital planning and administration, concerns the rapid shift in the character of illnesses with which we have to deal. Acute disease has rapidly given way to chronic disease. The normal aging of the population and the lowering of the birth rate would naturally involve such a change in the balance, but this has been exaggerated by the success of preventive as well as curative methods of treatment in the infectious diseases. As a result we have been caught off balance, with resulting confusion for the administrative and hardship for the patient group that seeks aid.

The private hospital, because of increased occupancy during the war years, resorted to the simple expedient of discouraging the admission of the chronic case and of pushing the convalescent patient out as rapidly as possible. Public hospitals in many instances have followed a similar pattern—few have squarely faced the problem. They have temporized with the immediate needs and have lagged even in planning to meet a situation that is becoming ever more obvious and pressing.

This study of Gardiner and Thomas will prove useful in stimulating an active interest in the subject as well as providing

factual data that will be useful. It presents the summary of cooperative efforts that began in 1920 with the appointment of a series of committees by the New York Academy of Medicine (Report of the Public Health Committee of the New York Academy of Medicine: Institutional Convalescence: Standards for the Care and Management of Convalescent Homes, New York, 1925) and which have been under consideration at various times since that time.

While Gardiner and Thomas's study has been focused largely about the convalescent home, the scope includes some aspects of the care of the chronically ill as well. New York has been fortunate in the development of the Montefiore Hospital, a project that has pioneered in this particular field.

The study of the convalescent homes in the New York area was on a sufficiently broad basis (there are more than eight hundred institutions of this character in the region) to provide assurance that the recommendations made by the authors are worthy of careful consideration by every hospital administrator and physician.

The Falling Sickness: A History of Epilepsy from the Greeks to the Beginnings of Modern Neurology. By Owsel Temkin, M.D., Associate Professor of the History of Medicine at the Johns Hopkins University, Baltimore, Md. Publications of the Institute of the History of Medicine. The Johns Hopkins University, First Series: Monographs, Volume IV. Cloth. Price, \$4. Pp. 380, with 7 illustrations. Baltimore: Johns Hopkins Press, 1945.

A reader of medical books does not every year find in his hands a new book which opens a world of rare and ancient treasures. This joy of discovery belongs to the reader of Dr. Temkin's book on "The Falling Sickness." The art of printing rescued from moldering destruction the hand written manuscripts of medical lore. However, these and many later writings are again inaccessible because of the decay of Latin and Greek as the physician's chosen means of written communication. With painstaking labor the author has combed the literature of the ancient and medieval worlds for explanations and treatments of the weird disease of sudden falling. He has sought the opinion not only of noted physicians and university professors but also of village practitioners, charlatans, functionaries of the church and the common man. The result is not only a panorama of seizures but a view of the painful progress of medicine, of science and of human relations from Hippocrates to John Hughlings Jackson. Therefore the book is not merely for the epileptologist but for all physicians and indeed all educated people who wish to increase the depth and the perspective of their knowledge and their sympathies.

Following are the main divisions of the subject: antiquity; middle ages; renaissance with its theological, philosophical and social aspects; the great systems of the iatrochemists and the iatrophysicists, of animism and eclecticism, the fight against the supernatural and the occult; and, finally, the nineteenth century. The 706 references, the index of about 700 personal names and the 1,717 footnotes attest the scholarship of the book. Six illustrations of seizures add interest to the text. The paper and binding are of prewar quality. The modest price of the volume is explained by use of the Epilepsy Medical Research Fund of Johns Hopkins University.

The best news for the general reader is saved for the last. The writing is clear, readable and at times amusing. Many books have been written about epilepsy, but this book has no historical rival. It occupies a separate shelf in the reviewer's Library of Fame.

Straight Down a Crooked Lane. By Martha Byrd Porter. Boards. Price, \$3. Pp. 234, with illustrations by Hans Jellinek. Richmond, Virginia: Dietz Press, Inc., 1945.

To the collections of personal memoirs like "Life with Father" is added this account of the life of a doctor and his wife, told by a lady with a sense of humor. Dr. Porter has practiced in Richmond for a good many years, and Mrs. Porter has observed with him the comings and goings of the medical elite and has indeed gone with him to some of the far places in the world. Like most doctors' wives, Mrs. Porter has had a full life. She tells about it gleefully. James Branch Cabell says it is "a lively, uninhibited volume which richly, in my judgment, merits praise. A beautiful book, alike in format and its matter."

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PENICILLIN IN EARLY SYPHILIS—SYPHILITIC REINFECTION

To the Editor:—Since the institution of penicillin therapy for syphilis in the Army I have come across 3 cases which have aroused considerable interest. In each of the 3, one course of 2,400,000 units of penicillin therapy for primary syphilis was administered. In all 3 the diagnosis was established on a dark field examination of the penile lesion. All three patients returned within a six months period with another penile lesion which revealed in each instance *Treponema pallidum* on dark field examination. I have been unable to find any definite information or reports available on the incidence of reinfection of primary syphilis. I feel that 2 of these cases are true reinfections because they are associated with a definite history of exposure and that the location of the lesion on the second recurrence is different from that of the first. The third case is questionable. Please advise regarding the incidence of reinfection in syphilis.

Alfred A. Diamond, Captain, M. C., A. U. S.

To the Editor:—I wish your opinion in a case of early syphilis treated by penicillin. There are lesions on the vulva of about one month's duration. Treatment has consisted of 3,000,000 units of penicillin in ten days. The Kahn reaction at the end of two weeks is still positive.

Don S. Fraser, M.D., Panama City, Fla.

ANSWER.—There is an enormous literature on reinfection in syphilis, reference to which may be found in any standard textbook, particularly the textbooks of Stokes and of Moore. In this connection the editorial entitled "The Changing Concept of Reinfection with Syphilis and Its Applicability as a Criterion of Cure" may be of interest. This appeared in the *American Journal of Syphilis, Gonorrhea and Venereal Diseases* (29:474 [July] 1945).

The information available indicates that, in early syphilis, a dosage of 3,000,000 units of penicillin in ten days is probably curative in 80 to 85 per cent of the patients so treated, assuming that the treatment is given by injections of an aqueous solution at intervals of not less than every three hours day and night. Failure of treatment, represented by reinfection, clinical or serologic relapse or seroresistance, is to be expected in 15 to 20 per cent. The blood serologic test of patients whose condition progresses satisfactorily becomes negative on the average from sixty to one hundred and twenty days after the initiation of treatment.

Patients so treated should be examined at monthly intervals for the first year, with clinical inspections and with quantitatively titrated blood serologic tests. In the absence of clinical manifestations and with a blood serologic titer falling to or toward seronegativity, the patient is progressing satisfactorily. On the other hand, the absence of quantitative serologic response, the presence of serologic relapse (as indicated by a confirmed rising titer) or the appearance of new clinical manifestations is an indication for retreatment. The patient's spinal fluid should be tested six months after the completion of penicillin therapy. If progress during the first year after treatment has been uneventful and seronegativity achieved, the patient may be checked during the second year every three months rather than once a month. Continued and prolonged observation for a minimum of five years is desirable. If relapse occurs, one may treat the patient again with penicillin, utilizing for the second course a total dose at least twice that originally administered, and combining with the second course a minimum of six injections of oxophenarsine hydrochloride given at the approximate dosage level of 1 mg. per kilogram, injections being given every other day.

AIR TRAVEL AND HYPERTENSION

To the Editor:—What is known about the effects of air travel on patients with essential hypertension? Can a patient of 56 with a blood pressure of 190/110 be permitted to travel by air? M.D., Massachusetts.

ANSWER.—Essential hypertension without complication is not a contraindication for air travel at usual airline flight levels. However, cardiovascular complications of hypertension are contraindications to air travel.

DERMATITIS FROM OILS AND SOLVENTS

To the Editor:—Eight men working in a neighboring plant engaged in manufacturing motors developed a dermatitis caused by sensitivity to cast iron dust, oils or solvents. In each case the diagnosis was quite definite, the history, character and distribution of the dermatitis being typical of an industrial dermatitis. The dermatitis cleared when they were removed from contact with these agents but recurred when they returned to the original work. These workers were then assigned to outside work, and the dermatitis remained away for a period of from three to six months in some of the cases and then recurred, even though there was no further exposure to the original irritants. It has always been my belief that the skin, like any other organ, after sustaining a severe initial injury could have subsequent attacks without further exposure to the original irritant.

M.D., Wisconsin.

ANSWER.—Since cast iron is innocuous as far as dermatitis is concerned, the industrial dermatitis was probably caused by oils and solvents. Since oils and solvents are encountered in many other places than in manufacturing motors, it is quite reasonable to deduce that those cases which recurred did so because the workmen again came in contact with oils or solvents. The type of dermatitis caused by cutting oils in general is different from that caused by solvents. Oils usually cause folliculitis, comedones and acne on the extensor surfaces of the forearms and thighs. Solvents cause an eczematoid dermatitis and usually affect the interdigital spaces, the fingers and the dorsum of the hands, although the forearms may also be involved. Subsequent attacks of dermatitis venenata cannot occur without subsequent exposure to the same irritant or a similar irritant. In the case of dermatitis from petroleum solvents, which act by defatting the skin, similar attacks of dermatitis may occur from contact with any of the solvents which also defat the skin, such as the chlorinated hydrocarbons, or even ordinary skin cleansers such as soap and water.

Reference:

Peck, Samuel M.: Dermatitis from Cutting Oils, Solvents and Dielectrics, Including Chloroacne, *THE JOURNAL*, May 20, 1944, p. 190.

TOXEMIA OF PREGNANCY AND LATE SYPHILIS

To the Editor:—A woman aged 35 in her seventh month of pregnancy has positive Wassermann and positive Kahn reactions to syphilis, with a vague history of exposure over ten years ago. In addition she has swelling of the hands, pitting edema of the ankles and pretibial region and a blood pressure of 178/92; there is no nitrogen retention nor urinary albumin. She was hospitalized and given 3 million units of penicillin, with bed rest and sedation and a salt free diet; her blood pressure returned to normal limits in three or four days. She came into the office three days after leaving the hospital for arsenical treatment, but her blood pressure had risen again so she was sent home to bed. I should like to give this patient intensive arsenical and bismuth treatment. Is this advisable?

Robert L. Bestoso, M.D., Newport, R. I.

ANSWER.—Since the patient is manifesting evidence of toxemia of pregnancy, it would seem advisable to give a second course of penicillin for the syphilis. In addition to the salt free diet, sedation and additional bed rest should be continued. If the syphilis is of ten years' duration, the likelihood of her having a child with congenital syphilis is less than if the syphilis had been more recently acquired. Nevertheless, treatment for syphilis is necessary to endeavor to obtain for her a nonsyphilitic child. Penicillin is less toxic to the kidney and liver than antisyphilitic chemotherapy, which is the reason for giving the second course. The value of penicillin in preventing congenital syphilis has not been fully established, but at the moment the results are encouraging.

PRURITUS ANI AND ALLERGY

To the Editor:—I have under observation a man aged 57 who has been intensively treated for the last several years for a very severe pruritus ani, including surgery of perianal skin, and who is highly sensitized or allergic to a variety of common drugs, including aspirin, salicylates and the sulfonamides. A severe burning and itching rash breaks out repeatedly on his forearms and face; this is an acute dermatitis of the papulovesicular type. Any suggestions concerning desensitization or treatment of this patient will be appreciated.

M.D., New York.

ANSWER.—Desensitization to drugs is not likely to be successful. If this is attempted, the oral route should be used. Minute doses of the drugs—perhaps in the form of a solution to measure more accurately—are given daily in slightly increasing amounts. It should take approximately two months to reach the dose to be used therapeutically. Other allergic factors should be considered (Schapiro, Saul, and Albert, M. M.: *The Role of Allergy in the Production of Pruritus Ani*, *J. Invest. Dermat.* 4:219 [June] 1941). The presence of food allergy may be investigated by means of skin tests, trial diets or a combination of the two. It is possible also that the condition may be due to a fungous infection or to intestinal parasites.

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PAROXYSMAL ABDOMINAL PAIN

A FORM OF FOCAL SYMPTOMATIC
EPILEPSY: II

MATTHEW T. MOORE, M.D.
PHILADELPHIA

One of the commonest complaints attending man from the cradle to the grave is abdominal pain. To enumerate the array of causes for such pain is not the province of this paper, but, in general, they originate not only from intrinsic disorders of the abdominal viscera but also from lesions of the thoracic viscera, spinal cord and peripheral nerves, and the more remote brain. It is the very multiplicity of these causes which often makes differential diagnosis difficult and elusive.

There is a small group, sufficiently large however and inadequately recognized to warrant further emphasis, in which the abdominal pain may have been present over varying periods of time without a demonstrable organic or psychogenic cause having been unearthed by the usual methods of study. What heretofore may have been considered unexplained abdominal pain obviously must have an explanation, and it is suggested that where this variety of pain exists study be directed to the possible existence of cerebral disease or dysfunction.

Exact localization of cerebral representation of gastrointestinal activity and abdominal pain is still not fully determined, but most data point to cortical mediation and possibly diencephalic influence. Fulton¹ has reviewed the early experimental work, beginning with Bochefontaine (1876), Hlasko (1887) and Bechterew (1911), indicating the evidence of cortical influence on gastrointestinal motility. Recent studies by Fulton and his co-workers,² Spiegel, Weston and Oppenheimer³ and Penfield and Erickson⁴ have confirmed and expanded the evidence of gastrointestinal representation in the cortex (areas 6, 5, 3 of Brodmann). Penfield and Gage⁵ have shown that abdominal pain may occur as an epileptic aura or an equivalent, and they describe pain arising in the lower right quadrant of

the abdomen followed by a convulsive seizure in a patient whose exposed brain was stimulated electrically in area 5a. In calling attention to the important subject of brain trauma and its relationship to disturbed function and production of lesions of the gastrointestinal tract, Cushing⁶ showed the probable role played by the diencephalon in this respect. Watts and Fulton⁷ also have demonstrated the effects of diencephalic lesions on the gastrointestinal tract.

From the clinical approach abdominal pain has been postulated as being a form of epileptic variant by Wilson⁸ and demonstrated in pure form by Moore.⁹ Klingman, Langford, Greeley and Hoefer¹⁰ have reported the cases of 12 children having unexplained attacks of paroxysmal abdominal pain in whom, by the history of associated manifestations of the convulsive state and the electroencephalographic findings of cerebral dysrhythmias, they concluded that the type of pain was an expression of an epileptic disturbance. Lambert¹¹ too has suggested that abdominal pain in children may represent a form of the convulsive state secondary to altered cortical function, as shown by electroencephalographic tracings in which the cerebral dysrhythmias were of the petit mal and psychomotor equivalent types.

Fits of varying forms, including abdominal pain, may result from a host of conditions producing either structural or physiologic changes in the brain. These causes have been amply enumerated and discussed by Cobb.¹² In the consideration of abdominal pain as a symptom of cerebral disease, Wechsler¹³ stated "I would call attention to the occurrence of abdominal pain, at times simulating appendicitis, renal colic, gallbladder disease and gastric or duodenal ulcer, in tumors of the brain. I have seen patients treated for a long time and even operated upon for abdominal syndromes which were the harbingers of brain tumors."

The following case reports constitute a group of individuals in whom abdominal pain was either the only symptom or an outstanding one, present and unrecognized over a considerable period of time, and in whom thorough history taking, detailed neurologic

6. Cushing, H.: Peptic Ulcers and the Interbrain, *Surg., Gynec. & Obst.* 55: 1, 1932.

7. Watts, J. W., and Fulton, J. F.: The Effect of Lesions of the Hypothalamus on the Gastrointestinal Tract and Heart in Monkeys, *Ann. Surg.* 101: 363, 1935.

8. Wilson, S. A. K.: Epileptic Variants, *J. Neurol. & Psychopath.* 8: 223, 1927-1928, *Modern Problems in Neurology*, London, Edward Arnold & Co., 1928.

9. Moore, M. T.: Paroxysmal Abdominal Pain: A Form of Focal Symptomatic Epilepsy, *J. A. M. A.* 124: 561 (Feb 26) 1944.

10. Klingman, W. O.; Langford, W. S.; Greeley, D. M., and Hoefer, P. F. A.: Paroxysmal Attacks of Abdominal Pain, an Epileptic Equivalent in Children, *Tr. Am. Neurol. A.* 67: 228, 1941.

11. Lambert, J. P.: Psychiatric Observations on Children with Abdominal Pain, *Am. J. Psychiat.* 98: 451, 1941.

12. Cobb, S.: Causes of Epilepsy, *Arch. Neurol. & Psychiat.* 27: 1215 (May) 1932.

13. Wechsler, I. S.: *Text Book of Clinical Neurology*, ed. 5, Philadelphia, W. B. Saunders Company, 1943, p. 494.

From the University of Pennsylvania Graduate School of Medicine
Paper published under the auspices of the Section on Nervous and Mental Diseases.

1. Fulton, J. F.: *Physiology of the Nervous System*, New York, Oxford University Press, 1943, pp. 437-439.

2. Watts, J. W., and Fulton, J. F.: Intussusception: The Relation of the Cerebral Cortex to Intestinal Motility in the Monkey, *New England J. Med.* 210: 883, 1934. Watts, J. W.: Influence of the Cerebral Cortex on Gastrointestinal Movements, *J. A. M. A.* 104: 355 (Feb 2) 1935. Sheehan, D.: Effect of Cortical Stimulation on Gastric Movements in the Monkey, *J. Physiol.* 53: 177, 1915.

3. Spiegel, E. A.; Weston, K., and Oppenheimer, M. J.: Postmotor Foci Influencing the Gastrointestinal Tract and Their Descending Pathways, *J. Neuropath. & Exper. Neurol.* 2: 45, 1943.

4. Penfield, W., and Erickson, T. C.: *Epilepsy and Cerebral Localization*, Springfield, Ill., Charles C. Thomas, Publisher, 1941.

5. Penfield, W., and Gage, L.: Cerebral Localization of Epileptic Manifestations, *Arch. Neurol. & Psychiat.* 30: 709 (Oct.) 1933.

examination and utilization of diagnostic aids including electroencephalography led to the consideration of the pain as a manifestation of focal symptomatic epilepsy.

CASE 1.¹⁴—P. P., a man aged 32, was referred by Dr. Marcel Sussman, June 4, 1941, with the chief complaint of periodic attacks of cramplike pain involving the entire abdomen. The pain often started in the lower right quadrant and then involved the abdomen throughout. At times the pain became so severe as to produce prostration and loss of weight. During the attack he had a "rumbling" sensation in the abdomen associated with considerable eructation. The seizures were not accompanied by headache or visual disturbances. He had never had diarrhea during a spell. Following the attack he was exhausted and felt "achy all over." The first attack occurred at the age of 9 months following the injection of diphtheria antitoxin. The attacks of abdominal pain came on at irregular intervals during his early life but during recent years have been very frequent, occurring about every seven or eight days, and during the week preceding the examination there were four seizures. At the age of 8 an appendectomy was performed during one of the attacks and a normal appendix was removed. He had been studied extensively and various diagnoses had been made, including hysteria, abdominal angioneurotic edema, abdominal migraine, psychogenic functional gastrointestinal disorder, hepatobiliary disease, enlarged colon, Dietl's crisis and diaphragmatic hernia. He received various forms of medication, including ergotamine tartrate, without obtaining relief. Both parents are living and there is no history of a similar condition existing in the immediate forebears. The neurologic examination showed no abnormal findings. Laboratory studies showed essentially normal findings, and previous x-ray studies of the gastrointestinal tract, urinary tract and gallbladder were negative. The blood pressure was 102 systolic, 68 diastolic, pulse rate 76, weight 139½ pounds (63 Kg.). Electroencephalography⁹ performed by Dr. Joseph Hughes showed large, low voltage, abnormal waves seen particularly in the right and left frontal regions. They were also present in the parietal and occipital lobes. This abnormal activity was increased with hyperventilation. The patient was placed on anticonvulsant therapy consisting of diphenylhydantoin sodium (dilantin sodium) 1½ grains (0.1 Gm.) twice daily and a bromide mixture 1 fluidrachm (4 cc.) four times daily. He remained attack free for seven and a half months, when medication was withdrawn, resulting in a return of seizures. On resumption of medication he was free from attacks until July 16, 1942, at which time a placebo was substituted in the diphenylhydantoin sodium capsules (the bromide mixture having been discontinued for some time) and again the attacks returned within fifteen days. The patient was terribly alarmed, believing the diphenylhydantoin was no longer effective, but when told about the experiment he was gratifyingly reassured. During the time he was attack free his weight rose from 139½ to 163 pounds (from 60 to 74 Kg.). He has been taking diphenylhydantoin sodium 1½ grains twice daily regularly and to the present date has been entirely attack free.

This patient had previously been treated for numerous conditions, among which was so-called abdominal migraine. He failed to respond to ergotamine tartrate. The periodicity of the attacks, their paroxysmal, abrupt onset, and their relatively short duration made it appear that the symptom was an abdominal epileptic variant. As indicated in the full case report,⁹ it was believed that the injection of diphtheria antitoxin had produced an angioneurotic edema of the brain with subsequent changes in the cerebral cortex which predisposed to abnormal cerebral discharges. These discharges were seen to occur predominantly in the frontal lobes, as

indicated by electroencephalography. The intense abdominal pain may be essentially intrinsic in the intestine, secondary to intense visceral contractions brought about by the abnormal cerebral discharges in the frontal and/or the parietal cortex.

CASE 2.—A. S., a man aged 43, was admitted to the Jewish Hospital to the service of Dr. Harold Goldburgh on May 1, 1944 with the admission diagnosis of enterocolitis. For six months prior to his admission he had been suffering from frequent attacks of severe abdominal pain associated with diarrhea, cold sweats, weakness and occasional loss of consciousness. At first the attacks occurred every eight to ten days and then increased in frequency, so that during the month prior to admission they occurred every day at least once and often several times daily. The past medical history revealed that at the age of 10 he had a head injury with a period of unconsciousness, the exact duration of which is not known. At the age of 12 he developed spells consisting of a "peculiar sensation" in the abdomen followed by a "prickly" feeling over the entire body, followed immediately thereafter by a cramplike pressure in the abdomen associated with "rumbling" and an awareness of the immediacy of a bowel movement. This was followed by a watery evacuation. This attack usually was accompanied with profuse sweating. In addition to these attacks he had spells consisting of blanching of the face, unconsciousness and falling to the floor, followed by "twitchings" (convulsive movements?) of the arms and legs and at times frothing at the mouth. These seizures occurred at intervals of one to three months and continued up to the present disturbance, which began six months before his admission to the hospital. The past medical history revealed the usual childhood diseases. In 1939 he contracted undulant fever, for which he received fever therapy. There was nothing in the remainder of the history to indicate any emotional disturbances. The patient is married. Both parents are living and well. Three brothers and one sister are living and well; a fourth brother is a mongoloid idiot. There is no history of epilepsy in the immediate or collateral members of the family. The blood pressure was systolic 145, diastolic 90. Laboratory studies revealed blood calcium, urea, sedimentation rate, Wassermann reaction, urinalysis, gastric analysis and the feces all normal. The sugar tolerance test was normal. The leukocyte count showed a low normal of 5,000 cells with 6 per cent eosinophils. Examination of the chest and abdomen was negative. X-ray studies of the entire gastrointestinal tract were reported as indicating the presence of enterocolitis and duodenitis. X-ray examination of the skull showed no abnormalities. The spinal fluid examination was negative. The neurologic examination showed the cranial nerves to be normal; sensation was preserved throughout the body in all modalities and was equal on the two sides; the tendon reflexes in the upper limbs were extremely prompt and there was a distinct preponderance on the left side; the knee jerks and ankle jerks were overactive and again there was increased activity on the left as compared with the right. Pathologic reflexes could not be brought out. Electroencephalographic studies performed by Dr. Donald Scott showed "that the alpha rhythm of 9.4 per second was equal and very persistent on both sides of the head. The general level of activity was low normal, while the pattern showed no irregularities whatever. A satisfactory hyperventilation resulted in no change in the record. In the absence of any abnormality, the record was not suggestive of the nature or origin of the patient's complaint." It was suggested that the patient be given diphenylhydantoin sodium 1½ grains twice daily. The attacks ceased until June 1944, when he stopped taking medication. Within two weeks he developed attacks of abdominal pain, which occurred almost daily. During October 1944, at a time when he was not taking diphenylhydantoin sodium, the attacks occurred several times daily. He finally resumed medication on Dec. 12, 1944, taking ¾ grain (0.05 Gm.) of diphenylhydantoin sodium four times a day. There was immediate relief, and during a recent interview he stated that he has been feeling better than at any other time in his life.

14. This case is reported in full by Moore⁹

The spells from which this patient has suffered over a period of thirty-one years usually occurred with explosive suddenness and often were preceded by a "peculiar" sensation which the patient had difficulty in describing adequately. This sensation is similar to that experienced in the epileptic aura. During the six month period preceding admission to the hospital he had predominantly abdominal pain as the main feature of his spells. These not infrequently terminated with unconsciousness, although not invariably so. There is a history of a head injury at the age of 10 and the onset of seizures at 12. Although the electroencephalogram failed to show abnormal cortical discharges, the immediate response to treatment with diphenylhydantoin sodium and the subsequent return of symptoms on cessation of treatment, and again the relief of the paroxysmal abdominal pain by resumption of anticonvulsant medication, would indicate the nature of the complaint being of an epileptic order. Gibbs and his associates¹⁵ in their analysis of 175 cases of post-traumatic epilepsy have shown that the electroencephalographic evidence of focal cerebral discharges occur in 51 per cent and generalized discharges in 41 per cent and that normal electroencephalograms occur in 8 per cent. They also state, "however, it must be recognized that a normal electroencephalogram does not exclude the possibility that a patient has brain damage or post-traumatic epilepsy."

CASE 3.—A. D., a girl aged 3 years, was admitted to the Jewish Hospital to the service of Dr. Samuel Goldberg, May 24, 1944 with the admission diagnosis of rickets. She was unable to talk, obeyed commands indifferently and had no control of bowel or bladder function. For many months she had periodic, abrupt attacks of crying, screaming and thrashing about, coming on without apparent cause at irregular intervals during the day. If the child was spanked, she seemed to go into a stupor and became rigid. She had been delivered normally at full term. At the age of 5 months she developed attacks of abdominal pain, which caused her to double up and cry out. The attacks were of short duration and occurred both diurnally and nocturnally. Following the individual seizures of abdominal pain the patient urinated and then slept three to four hours. Roentgen studies of the entire gastrointestinal tract showed nothing abnormal. From 6 to 11 months of age there was a period of relative quiescence with only occasional attacks of abdominal pain. In 1942 studies revealed an enlarged thymus gland and low blood calcium. A diagnosis of intestinal tetany was made and the patient was treated by irradiation of the thymus gland and the administration of calcium salts. Although less frequent, the spells of abdominal pain persisted until July 1943, since which time the abdominal pain has ceased.

The child walked at 17 months but failed to develop normally as regards talking and behavior. Both parents are living and well. There is no history of rheumatic fever, syphilis, tuberculosis, diabetes, epilepsy or mental disease in the family. Ophthalmoscopy before admission to the hospital revealed bilateral optic atrophy.

The neurologic examination showed that the child was capable of walking but presented pronounced mental deficiency. Both fundi showed atrophic disks. There was a definite defect in hearing. Over the skin of the nose and maxillary region there were small elevations of the skin in a butterfly configuration characteristic of the nevus multiplex of Bourneville (sebaceous adenoma of Pringle). Complete laboratory studies, as regards blood chemistry, blood count, blood Wassermann, blood calcium and phosphorus and urinalysis were negative. X-ray examination of the skull revealed no abnormalities. The triad of mental

deficiency, nevus multiplex of Bourneville and epileptoid manifestations first shown by abdominal pain and then by bouts of uncontrolled temper tantrums of a convulsive state pattern led to the diagnosis of tuberous sclerosis.

The diagnosis of tuberous sclerosis was made at the last admission to the hospital on the basis of the finding of the characteristic lesion over the skin of the face, together with mental deficiency and the interpretation of the abdominal pain and behavior disturbances as a convulsive state manifestation. The attacks of abdominal pain, which were originally diagnosed intestinal tetany, came on abruptly, were episodic and were of short duration, followed by exhaustion and deep sleep. This description fits into the seizure pattern of epilepsy. Another interesting phase of the history was the stupor and rigidity following on the child being spanked, which might well be the so-called reflex epilepsy.¹⁶ Although pneumoencephalography was not performed because of refusal by the parents, one can visualize the characteristic morbid changes in the brain being well scattered and involving the premotor cortex in area 6 and the parietal-sensory cortex in areas 3 and 5, which presumably influence intestinal activity (2, 3). The substitution of the bouts of abdominal pain by abrupt attacks of abnormal behavior occurring without apparent cause is probably also an exhibition of the convulsive state.¹⁷

CASE 4.—N. T., a boy aged 11 years, was referred by Dr. Ehrich Urbach, Dec. 11, 1944 with the history of attacks of unconsciousness, three of which had taken place during the past four years, numerous interval seizures of abdominal pain, nausea, occasional vomiting and diarrhea. The first episode occurred four years before, at which time he was unconscious and had convulsive movements, followed by a period of confusion. After a free interval of one month he had a second seizure. During July 1944 he experienced an attack of severe abdominal pain, following which he vomited and had diarrhea, the entire spell lasting about ten minutes. Prior to this he had had periods, lasting several months, of intermittent seizures consisting of waves of abdominal pain which came on about twice weekly with free intervals of six months to one year. These bouts of abdominal pain usually lasted from two to three minutes and occurred at intervals of two to ten minutes apart, the total "wave" lasting approximately one hour. These waves of abdominal pain occurred either in the morning or at night and were not accompanied with diarrhea or associated with unconsciousness. During the past year he had had frightful nightmares and talked in his sleep. His most recent attack, taking place when he was in bed, occurred two weeks before the present examination. He developed a headache, was nauseated, had a desire to defecate, and developed pain in the lower abdomen. The pain in the abdomen persisted and he experienced a feeling of suffocation. While in bed he had a continuous desire to move his bowels. After a period of several minutes he lost consciousness. Later in the evening, when he was found by his parents, he seemed confused. Following these bouts of abdominal pain there was always a short aftermath of slight confusion.

Five years prior to examination he sustained a severe head injury, having struck his head against a tree while sledding down an incline. He was unconscious for twenty-four hours. His previous history as regards delivery was normal, and he had the usual childhood diseases such as measles, mumps and chickenpox. The child was somewhat pudgy. The neurologic examination revealed that he was alert, and there was no disturbance in his mental sphere. The cranial nerves showed no abnormalities. There were no disturbances in motor dynamics.

16. Wilson, S. A. K.: *Neurology*, edited by A. N. Bruce, Baltimore, Williams & Wilkins Company, 1940, p. 1503.

15. Gibbs, F. A.; Wegner, W. R., and Gibbs, Erna L.: The Electroencephalogram in Post-Traumatic Epilepsy, *Am. J. Psychiat.* 100:738, 1944.

17. Moore, M. T.: *Aberrant Forms of Epilepsy: Their Disguise in Somatosensory, Psychic and Unusual Motor Displays*, Pennsylvania M. J. 48: 569, 1945.

Coordination, sensory endowments and tendon reflex activity were normal throughout. Examination of the chest and abdomen showed no morbid changes of the viscera. The blood pressure was systolic 98, diastolic 56; the pulse rate was 86, the weight 95 pounds (43 Kg.).

The patient developed attacks of abortive grand mal epilepsy one year following a severe head injury; these fits did not

galactogluconate (calcibronat-Sandoz) $\frac{1}{2}$ drachm (2 Gm.) dissolved in water three times daily. Following this form of medication there was an almost immediate cessation of the attacks of abdominal pain, and no grand mal seizures occurred. At the last examination on March 13, 1945 the patient had been entirely free from abdominal seizures and had shown much improvement in his mental acuity.

Electroencephalographic examination with the patient receiving full medication revealed the following findings (fig. 2): April 5, 1945. The alpha rhythm of 10 per second was equally persistent on the two sides of the head. The general level of activity was normal for a child of this age. The pattern closely resembled that which was seen before and consisted of a normal alpha rhythm, superimposed on which were numerous groups of slow waves, both with and without spikes. These could be seen on all leads but were most prominent in the frontal and occipital areas. They were usually bilaterally symmetrical, but not infrequently reversed on the left side. A satisfactory hyperventilation resulted in the appearance of two prominent groups of these waves in two minutes. Impression: The evidence pointed to a diffuse disturbance of cortical activity but it was not yet clear whether this was more properly considered as idiopathic epilepsy or some other form of diffuse damage.

The fact that the slow waves were usually in groups and often were bilaterally symmetrical, as well as most pronounced in the frontal area, pointed to the first possibility, while the single spike and slow waves, which reversed on the left, looked more like scarring. Taken as a whole, the record showed some 30 per cent less abnormal activity than the earlier study.

This patient had sustained a severe head injury five years before first being seen by the examiner. One year thereafter he developed an overt loss of consciousness with convulsive movements, the exact nature of which were not adequately described by his parents. This seizure was followed by attacks of abdominal pain which came on abruptly, lasted from two to three minutes and which appeared at intervals in a "wave-like manner," the entire cycle lasting up to one hour. The attacks of abdominal pain at times were accompanied by nausea and diarrhea and occasionally with vomiting. The electroencephalographic findings of

Fig. 1.—First electroencephalographic tracing in case 4.

have a stereotyped or well defined pattern. The attacks were characterized mainly by unconsciousness, questionable clonic and tonic phase, postictal confusion, and on two occasions loss of bowel and bladder control. In addition to this there were episodes of abdominal pain which occurred at irregular intervals and which came on paroxysmally in waves. These attacks of abdominal pain, followed occasionally by a short period of confusion, might well be the result of abnormal discharges in the frontal or parietal lobes. It was felt expedient, therefore, to have electroencephalographic studies done as well as x-rays of the skull. The latter were negative. The former were interpreted by Dr. Donald Scott to be as follows (fig. 1): The alpha rhythm of 9 per second was equally persistent on the two sides of the head. The general level of activity was considerably increased above normal limits, owing largely to the presence of slow waves, which could be seen on all leads. These occurred both singly and in groups, and, while they gave no indication of a focal origin, they were somewhat more persistent in the frontal area than elsewhere. It was interesting that this type of activity was almost wholly abolished when the patient opened his eyes. In frequent instances this slow wave activity was organized into typical groups of spike and slow wave forms, which were bilaterally symmetrical. No hyperventilation was attempted. Impression: The decidedly abnormal activity which was seen in this record was strongly suggestive of the type of disturbance usually seen in cases of idiopathic epilepsy. In view of the history of trauma, particular care was taken to find a focal origin, but, while some groups of slow waves reversed on the left, an equal number reversed on the right and even more frequently the activity was bilaterally symmetrical. Also it has been our experience that, unless the damage is very severe, focal activity will not be seen from all areas of the cortex. In conclusion, the record most closely approximated the pattern seen in idiopathic epilepsy.

It will be seen from the description of the electroencephalographic findings that the slow waves were found mainly in the frontal lobes, although there was a diffuse scattering of abnormal discharges throughout the brain. It was concluded, therefore, that the patient had a form of post-traumatic epilepsy manifesting itself in two varieties: one, an abortive form of grand mal (three seizures in four years), two, a frequent, interval variety assuming the characteristics of abdominal epilepsy.

On Dec. 26, 1944 the patient was directed to take $1\frac{1}{2}$ grains of diphenylhydantoin sodium twice daily and calcium-bromine-

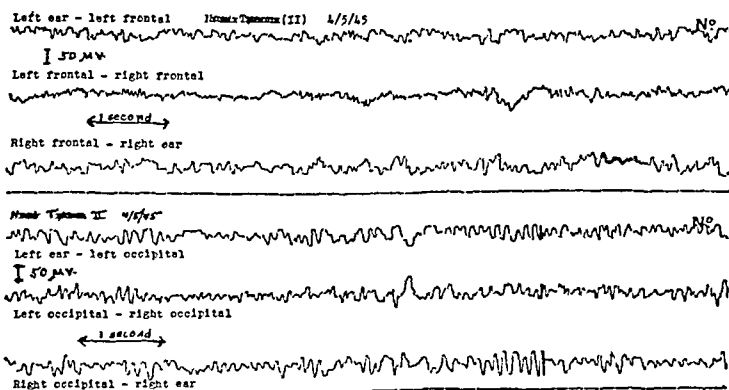


Fig. 2.—Second electroencephalographic tracing in case 4.

abnormal cerebral discharges, akin to those seen in idiopathic epilepsy, predominantly in the frontal lobes, would indicate that the seizures of abdominal pain represent an epileptic variant. Moreover, the immediate and continued response to anticonvulsant medication would again point to the relationship of the abdominal pain to cortical dysfunction. In addition,

the electroencephalographic findings with the patient under medication (fig. 2), showing the 30 per cent damping out of the previously existing abnormal discharges, indicates the action of the anticonvulsant drugs¹⁸ and the tendency to permit the focal nature of the discharges to come to the fore. It will be seen in this case that the dominant form of attack was that of paroxysmal abdominal pain occurring in a seizure pattern corresponding to that found in typical epilepsy. Only three attacks of abortive grand mal occurred during the five year period dating from the head injury. The abdominal pain was by far the more annoying and persistent difficulty which had eluded treatment prior to the administration of diphenylhydantoin sodium and the calcium-bromine preparation.

CASE 5.—R. Van O., a youth aged 19 years, was referred by Dr. Raymond Katzen on Nov. 24, 1941 with the history of having had periodic bouts of scintillating scotomas, severe headaches and abdominal pain. These attacks were initiated with scotomas composed of flashes of silvery white flickering light, forming an arc in the visual field. Immediately following this, pain developed over the right eye and in the right temporal region. The headaches were then followed by abdominal pain. These attacks usually began in the morning. Preceding the attack the patient's face became ashen white and his hands blanched. He had five such attacks during the year preceding the examination. In addition to these seizures he had frequently been found to walk in his sleep, of which fact he had been entirely unaware except on several occasions when he had fallen downstairs and regained consciousness as a result of the tumble. At 2½ years of age he had a severe head injury with the formation of a hematoma over the right side of the forehead. Scintillating scotomas began at the age of 4. During the past year the attacks had always been accompanied by the abdominal pain, which invariably followed the headaches. These spells lasted from several minutes to as much as one or two hours.

Both parents were living and in good health. His mother, in her youth, was a somnambulist. A maternal grandfather likewise was given to sleepwalking. Two siblings were well and did not suffer from a similar condition. No member in the immediate family or collateral members had headaches or a similar condition.

The patient was cooperative, was well developed physically and showed no evidence of endocrine dysfunction. Examination of the cranial nerves revealed that they were entirely normal. There were no defects of motor dynamics. Tendon reflex activity throughout the body was normal and equal. Pathologic reflexes could not be brought out. There was no disturbance in cerebellar function. Sensation was preserved throughout the body in all modalities. Other phases of the neurologic examination were entirely normal. Blood pressure was systolic 120, diastolic 68; pulse rate 72. X-ray studies of the skull revealed no abnormalities. Complete laboratory studies gave only normal results.

The episodic nature of the attacks, their abrupt onset, their relatively short duration and the associated history of somnambulism prompted me to have an electroencephalogram performed so as to determine whether the entire symptom complex was of a migrainous nature or epileptic in origin. The electroencephalographic studies were carried out by Dr. Joseph Hughes, who reported (fig. 3) that there were slow 5 to 7 per second waves seen throughout both hemispheres, particularly in the frontal and parietal regions and in the left occipital lobe. The rhythms of the right occipital lobe came through at 9 per second. These 5 to 7 per second ranged from 10 to 30 microvolts in amplitude. After a period of hyperventilation,

large, slow, abnormal waves varying from 50 to 100 microvolts in amplitude and from 3 to 6 per second in rate appeared in both hemispheres. These were definitely abnormal. This electroencephalographic response was indicative of some type of increased cortical irritability. There was no evidence of any focalized lesion.

The patient had received medication designed to control what formerly had been considered migraine, but to no avail. After the electroencephalographic report indicated presence of abnormal cortical discharges, he was given diphenylhydantoin sodium 1½ grains twice daily, and phenobarbital ¼ grain (0.016 Gm.) three times daily. On May 4, 1942, a little less than six months after the institution of treatment, he developed a mild attack while at work. He had had no somnambulistic excursions, however, during this period. During October 1942 he still had been free from headaches, abdominal pain and scintillating scotomas. He had gained 8 pounds (3.6 Kg.) and was feeling better than he had for many years. During that month he was anxious to enlist in the armed services and, contrary to the advice of his physician and parents, enlisted without informing the induction board of his symptoms and the electroencephalographic findings. He entered the Air Cadet Service and for a time continued to take his medicine without the knowledge of the officer in charge. When the supply of medication was gone he began to develop attacks of exactly the same nature as those of which he originally had com-

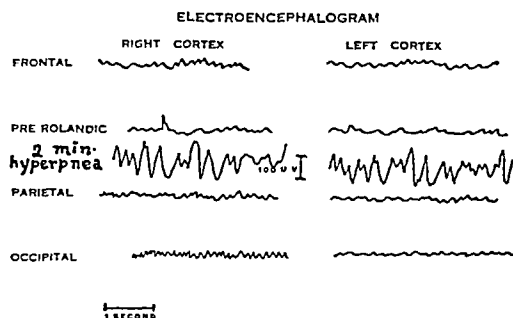


Fig. 3.—Electroencephalographic tracing in case 5.

plained. He was studied by the medical examiners of the Army Air Force, resulting in his discharge from the Army on a medical certificate.

This patient had formerly been treated for migraine. However, careful evaluation of the symptoms and the associated sleepwalking, together with the history of head trauma during childhood, made it imperative to rule out the possible existence of the convulsive state as the correct explanation. It has been suggested by Wilson⁸ that scintillating scotomas and headaches may be epileptic variants and are to be differentiated from true migraine. Gowers,¹⁹ Oppenheim,²⁰ Riley²¹ and Cobb²² have indicated the probable relationship between migraine and the epileptic state and the need for distinguishing one from the other. Somnambulism has been considered as an epileptic variant. The abdominal pain in this patient occurred as part of the constellation of scintillating scotomas and headache. The electroencephalograms showed definite evidence of abnormal cerebral discharges, the disturbance appearing mainly in the frontal and parietal areas.

18. Goldman, D.: Clinical and Electroencephalographic Observations in Severe Epilepsy Under Treatment, *Am. J. M. Sc.* 205: 388, 1943.

19. Gowers, R. W.: *Borderland of Epilepsy: Faints, Vagal Attacks, Vertigo, Migraine, Sleep Symptoms and Their Treatment*, London, J. & A. Churchill, 1907.

20. Oppenheim, H.: *Textbook of Nervous Diseases*, Edinburgh, O. Schulze & Co., 1911.

21. Riley, H. A.: *Migraine*, *Bull. Neurol. Inst. New York* 2: 429, 1932.

CASE 6.—Mrs. P. P., aged 44, referred by Dr. Lynn Rankin on May 4, 1944, gave as her chief complaint abdominal pain. She stated that her present condition dated back twelve years. Ten years before, because of repeated abdominal pain, she had her appendix removed, the biopsy of which showed no morbid change. The symptoms continued. During the past ten or twelve years she consulted numerous physicians of various specialties without being relieved by many forms of medication and treatment. The individual attacks consisted of what she described as a "gnawing" disturbance followed by generalized pain in the abdomen, accompanied by a "rumbling noise in the intestine." Occasionally the abdominal pain was accompanied by a "funny, dazed feeling," and she often feared that she was going to "pass out." She had never lost consciousness during these spells, however. The attacks occurred mainly at night. On three occasions, all of which occurred while in bed, the attacks of abdominal pain were associated with "shaking" of her limbs and jaws which she was unable to control, the entire episode lasting from ten to fifteen minutes. These attacks sometimes awakened her from sleep. She had not complained of headaches, nausea, vomiting or diarrhea preceding, during or subsequent to these attacks. In some of the episodes of abdominal pain she noticed that the sensation would extend into the chest and up into the head. During the four month period prior to examination, the seizures occurred about twice weekly. She had had free intervals lasting not more than one week. She lost about 10 pounds (4.5 Kg.) during the last eight months. The past medical history revealed no evidence of meningitis, encephalitis, head injury or serious illnesses. She had been married nineteen years, and her husband was living and well. There was no similar condition in the immediate or collateral members of the family.

The neurologic examination was entirely negative. There were no overt disturbances in her emotional or mental spheres. She appeared to be well adjusted in her marital life, and there were no difficulties in her social environment. Examination of the chest and abdomen showed no evidence of gross visceral disease. Previous x-ray studies of the gastrointestinal tract showed no morbid changes, and laboratory studies were entirely normal. Electroencephalographic studies done by Dr. Joseph Hughes showed no abnormal cerebral discharges of the type usually associated with the convulsive state. It was felt, in view of the nature of the seizures, together with the description of the "funny, dazed feeling," the occasional ascension of the abdominal pain into the chest and head similar to the aura preceding a typical grand mal fit and the pseudoconvulsive movements which had occurred on three occasions, that the abdominal pain was a form of abdominal epileptic variant. Accordingly she was placed on anticonvulsant therapy consisting of diphenylhydantoin sodium $1\frac{1}{2}$ grains twice daily and phenobarbital $\frac{1}{4}$ grain three times daily. Medication was started April 24, 1944, and one week later she stated that there had been a cessation of the abdominal pains and a disappearance of the belching, and that she had improved generally. She has continued to remain on treatment and to date has not had a return of symptoms.

The physician who referred this patient stated that previous examiners had labeled her as a psychoneurotic, after failure to discover an organic cause for her symptom of abdominal pain. The irregularity of the attacks and their nocturnal appearance, aura-like sensations and myoclonic movements on three occasions indicated the epileptic nature of the spells of abdominal pain. The "rumbling noise," described in exactly this way by other patients, may be the auditory representation of increased intestinal activity.

This patient had a normal appendix removed, as did patient 1.

COMMENT

The 6 cases presented here have as a common denominator paroxysmal attacks of abdominal pain. In 2 cases (1 and 6) this happened practically in "pure" form. In case 4 the predominant seizures consisted of abdominal pain occurring in wavelike attacks which corresponded closely to the seizures described in cases 1 and 6. These three cases (1, 4, 6) had been studied quite intensively before the tentative diagnosis of abdominal epilepsy was entertained; 2 of these patients showed abnormal electroencephalographic findings characterized by slow waves occurring mainly in the frontal and parietal lobes. All 3 of these patients responded immediately and continuously to anticonvulsant therapy in the form of diphenylhydantoin sodium and bromides or phenobarbital. Patient 2, during a six month period preceding admission to the hospital, had seizures characterized predominantly by abdominal pain. The latter had been thought to be so-called enterocolitis; treatment in this direction failed to yield results. A careful evaluation of the history in terms of a head injury, periodic bouts of abdominal pain, diarrhea, cold sweats, weakness, occasional loss of consciousness, falling to the floor, convulsive movements of the arms and legs and frothing at the mouth all indicated the probable epileptic nature of the recently outstanding abdominal symptoms. Despite the negative electroencephalographic studies anticonvulsant therapy was begun, and during the time the patient cooperated and took medication he was seizure free.

It will be seen that 3 of the 6 cases had a history of antecedent head injury. One presumably had cerebral angioneurotic edema following the injection of diphtheria antitoxin, with a sensitization or morbid change in the cerebral cortex, and 1 case tuberculous sclerosis with undoubted morbid changes in the brain. Case 6 showed no etiologic background. Thus the majority of cases presented give historical evidence of disturbed cortical structure and function.

In view of the experimental and clinical data previously referred to²² that disturbances of gastrointestinal motility may be influenced by lesions involving the frontal lobe (area 6 of Brodmann) and the parietal lobe (areas 5 and 3), it may be argued that the attacks of abdominal pain experienced in the cases reported here was a manifestation of abnormal discharges occurring in the cerebral cortices, producing intestinal activity of a painful variety. The electroencephalographic findings in 3 of the patients seem to corroborate such a stand. Wechsler²³ observed in his study of abdominal pain as a symptom occurring in space-taking lesions of the brain that "most of the evidence presented points to the cortex and possibly to the frontal more particularly the premotor area as the source of neuro-genic abdominal pains."

The 5 patients who were given anticonvulsants responded favorably and quickly to the use of diphenylhydantoin sodium alone or in combination with phenobarbital or bromides. Since the introduction of diphenylhydantoin sodium by Merritt and Putnam²⁴ into the armamentarium of anti-convulsant drugs it has

22. Fulton,¹ Watts and Fulton.² Watts.² Sheehan.² Spiegel, Weston and Oppenheimer.³

23. Wechsler, I. S.: Abdominal Pain as a Symptom of Disease of the Brain, *J. A. M. A.* 105: 647 (Aug. 31) 1935.

24. Merritt, H. H., and Putnam, T. J.: Sodium Diphenyl Hydantoinate in the Treatment of Convulsive Disorders, *J. A. M. A.* 111: 1068 (Sept. 17) 1938.

proved one of the most valuable in this field. Goldman¹⁸ has studied the effect of diphenylhydantoin sodium and phenobarbital on the electroencephalograms of patients suffering from severe epilepsy and has shown the damping out effect, by these anticonvulsants, of the abnormal cerebral discharges. This effect on the electroencephalogram was demonstrated in cases 1 and 4, the only 2 in which electroencephalographic studies were performed before and during treatment.

One half of the 6 cases reported here gave a history of head injury. This, as a possible cause of abdominal epilepsy,¹⁷ "is considered important at this time because of the strong likelihood of many cases of epilepsy or its variants finding their way into medical practice as the result of craniocerebral injuries and infections incident to World War II, and those which may appear with the return of the automobile and airplane to extended civilian use."

To establish the diagnosis of abdominal epilepsy and its etiologic background, it is necessary, in those patients presenting the symptom of abdominal pain, to observe the following steps in study:

1. Cases must be examined intensively, by all available methods, to rule out intrinsic disease of the pelvic, abdominal and thoracic viscera, morbid involvement of the spinal cord or peripheral nerves and psychosomatic projection mechanisms.

2. Historical data regarding the possible existence of cerebral disease or dysfunction should be uncovered.¹²

3. The behavioristic occurrence of the pain should adhere, in major respects, to the pattern of epilepsy so aptly stated by Wilson:²⁵ "Any fugitive, paroxysmal, disorderly, uncontrolled and recurrent manifestation of any neural process might be regarded as a fit, and this on any level of the neuraxis. . . . As for fits implicating visceral centers, there may be no interference with the conscious stream, no involvement of skeletal muscles and, in fact, none of the usual signs of epilepsy, so that divergence of the formula may be extreme. . . . The least mutable of accepted fit characters comprise sudden onset, brief duration and recurring habit; yet some forms are protracted (notably *epilepsia partialis continua*), repetitions may be extraordinarily infrequent, and brevity loses significance when the aura (as in some uncinata cases) is drawn out."

4. The presence of associated epileptic phenomena, either preceding or during the presenting episodes of abdominal pain, will form corroborative evidence of the nature of the disorder.

5. Positive neurologic signs and laboratory findings including cytologic and chemical studies, roentgenologic studies of the skull and electroencephalographic studies, indicating the existence of a cerebral structural or physiologic disorder, should be in evidence.

6. Salutary effects of anticonvulsant drugs on the occurrence of abdominal pain should be exhibited, and the influence of these drugs on the electroencephalogram should in most instances parallel the clinical results.

SUMMARY

Clinical study of 6 patients (2 children, 4 adults) in whom paroxysmal abdominal pain was either the only symptom or the dominant one revealed this to be a type of epileptic variant (abdominal epilepsy), as shown by the pattern of symptomatology, electroencephalography

and response to anticonvulsant drugs. Three of the patients presented the history of antecedent head injury; 1 had cerebral angioneurotic edema following injection of antiserum prior to the onset of abdominal seizures; 1 had paroxysmal abdominal pain diagnosed as intestinal tetany occurring in an unrecognized case of tuberous sclerosis; 1 showed no etiologic background.

There is need for recognition of unexplained paroxysmal abdominal pain, when study of the abdominal viscera has been negative, as being possibly of cerebral origin due to abnormal cerebral discharges arising in the premotor or parietal areas. These symptoms are liable to be present in the returning war veteran who has suffered a severe head injury, and there is likelihood of failure to evaluate its true nature.

The criteria for diagnosis are based on (1) exclusion of intrinsic visceral disease, (2) adequate historical data, (3) attack pattern of an epileptic order, (4) associated epileptic show, (5) objective evidence of cerebral organic disease or dysfunction and (6) effect of anticonvulsant drugs on the symptom of abdominal pain and on the electroencephalogram.

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ABSTRACT OF DISCUSSION

DR. STANLEY COBB, Boston: Dr. Moore is to be congratulated on his excellent clinical paper. The 6 cases are clearly presented and are convincing. I agree in his diagnosis and consider that his careful study should be taken as a model. I especially like his emphasis on history and the clinical descriptions of the seizures. The success of therapy with anticonvulsant drugs is another impressive part of the evidence which builds up his diagnosis. In case 2, in which the history is clearly that of epilepsy, there is a normal electroencephalogram. The author quotes Gibbs as saying that such normal tracings may occur in 8 per cent of patients with post-traumatic epilepsy. My experience is that many more than 8 per cent have normal electroencephalograms between attacks. If caught in an attack, of course practically every patient shows abnormal discharges. A normal tracing between attacks does not rule out epilepsy. On the other hand, the finding of abnormal waves is important evidence in favor of this diagnosis when the history and clinical description lead one to suspect epilepsy. I do not like the use of the terms "petit mal," "grand mal" and "psychomotor," as if all kinds of epileptic seizures could be classified under one of the headings. In a consulting practice one sees more "atypical fits" or "variants" than orthodox convulsions. Variations in consciousness with peculiar behavior are common and more important to remember than the textbook picture and "grand mal," in which the sequence of events is said to be aura, unconsciousness, tonic spasm and clonic jerks followed by stupor. Common enough, I grant, but any street car conductor can make the diagnosis in such cases. Dr. Moore merits our thanks for describing a variant that is not rare and is often wrongly diagnosed. Case 4 illustrates the point that "grand mal" and "petit mal" are not as useful terms as one is given to suppose. The fits are spoken of as "abortive grand mal," and certainly more of them were very far from being typical. The electroencephalogram showed "groups of spike and slow wave forms," which Lambert (quoted earlier in the paper) would call a dysrhythmia of the "petit mal type." The history of this patient clearly shows that he never had any fits remotely resembling "petit mal." In short, types of electroencephalographic wave and types of clinical fit do not correspond very well, and there is still much to be learned in this field. It may be of interest to point out that in 3 of these cases, to a striking degree, and in all of them to some extent, the symptoms resemble those of neostigmine poisoning. What could this mean in relation to epilepsy, the autonomic nervous system and acetylcholine?

25. Wilson: *Neurology*,¹⁸ pp. 1469-1470.

DR. TRACY PUTNAM, New York: Dr. Moore has clearly brought out the characteristics and significance of the abdominal pain and other digestive disturbances which may occur as a form of epileptoid attack. In my experience such attacks are particularly common and puzzling in children, and I have studied a large number of cases since the original publication of Klingman, Langford, Greeley and Hoefer from this clinic. The occurrence of such attacks following head injury is of great interest and importance. I am particularly happy to hear his criteria for diagnosis so clearly enunciated. The boundaries of the still poorly explored territory of the epileptoid states are not clearly marked, and such definitions as he has formulated will do much to clarify them. If they are rigorously applied to other puzzling syndromes without obvious gross structural basis, and of paroxysmal nature, it is likely that we shall find still other new epileptic equivalents.

DR. E. A. SPIEGEL, Philadelphia: Dr. Moore's observations are a beautiful example of clinical application of experimental results. Fulton and his colleagues observed changes of gastrointestinal activity on stimulation of the so-called premotor area of the frontal lobe, while our group demonstrated that such effects could also be obtained from "postmotor" foci in the parietal lobe. We were also able to trace, by means of Marchi degeneration, descending fibers from these postmotor areas, which fibers joined the pyramidal tract system. Dr. Moore's observations corroborate these findings in that some of his cases showed abnormal discharges not only from the frontal but also from the parietal lobes. He is inclined to interpret the attacks of abdominal pain in these patients as due to gastrointestinal spasms elicited by impulses descending from these areas of abnormal cortical discharges. Such an interpretation seems justified in the majority of his material, in that signs of abnormal gastrointestinal activity were demonstrable during the paroxysmal abdominal pain. However, besides the stimulation of descending systems acting on the gastrointestinal tract, pain projected into the abdomen could also be produced by a somewhat different mechanism, namely by stimulation of cortical sensory areas receiving impulses from the viscera. Dr. Hunsicker and I observed changes of the electrocorticogram on stimulation of afferent fibers of the pelvic nerve, and Bailey and Boemer made similar observations for afferent vagal fibers. It seems to me that stimulation of such cortical sensory areas for afferent impulses from the viscera could play a role in cases like the sixth of this series, in which the sensation extended into the chest and up into the head.

DR. N. W. WINKLEMAN, Philadelphia: Evidence is gradually accumulating that the cerebral cortex is concerned with the motility of the gastrointestinal tract. Gross lesions, particularly of the frontal lobes, have been shown to produce abnormal intestinal movements. It may well be that hypermotility of the gastrointestinal tract on a known emotional basis may result from stimuli that also originate in the same cortical region. As an illustration of the first group, a man aged 45, whose initial symptoms were abdominal pains of such severity that he was actually "doubled up" gradually became stuporous and died within a period of four to five days. At autopsy a softened area in the fronto-motor-parietal area was found, into which hemorrhage had occurred. The 6 cases reported by Dr. Moore are interesting and instructive. In case 1 the temporal relationship of the first attack to the diphtheria antitoxin is somewhat vague, yet the patient must have been allergic in view of urticaria at a later date. This brings up the question of the effect of the antitoxin on the brain. Gøten and I (*Encephalomyelitis Following the Use of Serum and Vaccine*, *Am. J. Syph. & Neurol.*, 19:414 [July] 1935) have shown that an acute encephalomyelitis disseminata can develop in susceptible individuals from serums and vaccines. Permanent cerebral damage can result. I am sure that most of us would have first diagnosed migraine in case 5. The history of attacks of hemicrania preceded by scintillating scotomas is certainly suggestive of this condition. The history of somnambulism, however, suggests an added condition—epilepsy. Somnambulism can be a postepileptic automatism as well as an epileptic equivalent. Migraine and epilepsy are not unknown in the same patient and may be

related, as some believe. The abdominal pain in this case, therefore could have been either abdominal migraine or abdominal epilepsy. Dr. Moore told me that he too treated this patient for migraine before realizing that it was part of the epileptic syndrome. It was the natural thing to do. In the other cases the relationship between convulsions and the abdominal crises is more direct and more definite. Treatment for the convulsions in these cases should relieve or ameliorate the abdominal symptoms. The lesson taught by this paper is obvious. The nervous system can and does exert influence at a distance, and many apparently remotely removed symptom complexes may have as their basis some organic problem within the central nervous system.

DR. MATTHEW T. MOORE, Philadelphia: I wish to express my thanks and indebtedness to the discussers for their valuable and pertinent comments. I am completely at one with Drs. Cobb and Putnam regarding the epileptoid states and the nosologic inadequacy of such terms as "grand mal," "petit mal" and "psychomotor." These terms represent the mental conditioning of the physician as a means of orientation, but it must be stressed, as Dr. Cobb properly does and as I have done elsewhere,¹⁷ that "atypical fits" or "variants" occur more frequently than orthodox epileptic convulsions. Moreover, they generally go unrecognized because, in Dr. Putnam's words, "the boundaries of the still poorly explored territory of the epileptoid states are not clearly marked," which poses the challenge to us of delineating more clearly these boundaries and of corraling the many vagrant forms into a recognizable group. Dr. Cobb's observation regarding the similarity of the abdominal symptoms to neostigmine poisoning is extremely interesting, since this thought had occurred to me at the time I was studying patient 1. The implications of this observation should be further explored experimentally in terms of the role played by the autonomic nervous system and the ultimate physiobiochemical mediators or effector agents which may produce the manifold expressions of the epileptic state. It is true, as Dr. Spiegel states, that abdominal pain, or pain projected to other visceral areas, may be due to stimulation of the cortical sensory areas receiving afferent impulses from the viscera, but this can occur with an unaltered normal cortex. This mechanism of afferent impulses stimulating either motor or sensory areas or both probably is the explanation for the phenomenon of so-called reflex epilepsy. However, in the majority of the cases reported here it is presupposed, on the basis of the history, neurologic data and electroencephalographic studies, that the abnormal discharges arise in the vicinity of disturbed cortical tissue, albeit these areas may be fired off by remote afferent impulses of the order described by Dr. Spiegel or by humoral factors. The case cited by Dr. Winkelman is a striking example of a gross cerebral lesion causing abdominal pain. It will be noted that both the frontal and parietal lobes were involved. With such material and the cases reported here as a basis on which to work, is it not likely, therefore, that many of the unexplained and commonly occurring attacks of abdominal pain may be due to abnormal discharges arising from sensitized, traumatized or morphologically altered areas of the frontal and/or parietal cortex?

Alcohol and Accidents.—Alcoholic intoxication is one of many factors contributing to traffic accidents. The factors contributing to accidents may be classified in the following four general categories: (1) driver factors, (2) road factors, (3) vehicle factors and (4) pedestrian factors. Driver factors are especially important and are made up of three classes: deficiencies in physical condition, lack of knowledge or skill and improper attitude. Physical deficiencies include not only permanent physical deficiencies, such as a lost arm or leg, but also such temporary deficiencies as those resulting from fatigue or the influence of alcohol. Many drivers with permanent physical deficiencies compensate for them, but it is difficult to compensate for a temporary deficiency such as the influence of alcohol.—Berry, Donald S., in *Alcohol, Science and Society*, New Haven, Quarterly Journal of Studies on Alcohol, 1945.

CLINICAL TRIALS WITH QUININE-
EPINEPHRINE INTRAVENOUSLY

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The successful current use of quinacrine (atabrine), orally and intramuscularly, in treating malaria has not relegated quinine to the scrap-heap of obsolete medicinals for this infection. Quinine has been widely used intravenously in civilian practice and in the armed services as an emergency measure in, or for initiating treatment of, the embolic or cerebral form of the disease, especially with coma. The effectiveness of the quinine, under these conditions, has not been challenged, but the safeness of the procedure has been considerably debated.

In general, clinical reports¹ have been rather opinionated without substantial support of the claims for or against using quinine intravenously. The possible hazard in the circulatory depression from quinine has been consistently recognized, although the intravenous procedures used have not always considered measures for controlling or combating this. The alkaloid has been given empirically with or without an antagonist. Intravenous epinephrine has been condemned by some almost as much as quinine. However, use of an appropriate antagonist with the quinine would seem to be desirable, at least, in depressed circulatory states, as in comatose patients with the embolic type of malaria.

Since nothing has been known of the scope of possibly desirable antagonists, Dreisbach and Hanzlik² made an extensive experimental study of this problem in several directions. Of some thirty-two agents tested, three were found to be effective against doses of quinine of therapeutic order. These were epinephrine, neosynephrine and calcium chloride, in descending order of efficiency and desirability. Epinephrine and neosynephrine were also the most effective antidotes of a number of those commonly recommended in severe circulatory collapse after high doses of quinine. In animals it made practically no difference, according to the percentage fall in blood pressure, whether the quinine was injected comparatively rapidly, or slowly, as for thirty minutes, advised clinically. Experimentally the choice agent was epinephrine, 0.015 mg. per kilogram of body weight, mixed with quinine sulfate 10 mg. per kilogram in isotonic solution of sodium chloride (U. S. P.). This dose of epinephrine prevented or mitigated the depressor action of the quinine, whereas 0.01 mg. per kilogram was not always adequate, and 0.02 mg. per kilogram considerably raised the blood pressure. The antagonistic action of the epinephrine generally was not successful after the third dose of quinine.

Translated to a 70 Kg. man, and assuming similar actions, the dose of 0.015 mg. of epinephrine per kilogram was the equivalent of a total dose of 1.05 mg., which agreed almost exactly with 1.0 mg. recommended by Escher and Villequez³ in 1931. The published report of these French army medical officers has been generally overlooked by others. As the result of an extensive experience with different methods of administering quinine in malaria in the tropics, Escher and Villequez recommended the following mixture for intravenous injection, especially for patients in shock or coma: 0.5 Gm. (up to 0.8 Gm.) of quinine hydrochloride and 1 mg. of epinephrine in 250 cc. of isotonic solution of sodium chloride injected in not less than thirty minutes. Escher and Villequez favored the general use of quinine intravenously in malaria as being the most effective medication and used it without epinephrine for noncomatose patients.

Practically in agreement with Escher and Villequez is a recent clinical report by Fitz-Hugh, Pepper and Hopkins⁴ which appeared after the experimental results of Dreisbach and Hanzlik were submitted for publication. These United States Army medical officers treated 6,059 patients with malaria in India, and of these 140 had cerebral malaria. They found that the great majority of patients with cerebral malaria required one or more intravenous injections of quinine dihydrochloride, 0.32 to 0.65 Gm., in saline or saline-glucose solutions, before they could be aroused enough to take oral medication. The drug was slowly administered and well diluted (200 cc. minimum—preferably 500 cc. or more) and caused no fatalities fairly attributable to its use. As to the value of epinephrine and of quinine intravenously and the precautions to be observed, they state that the intravenous administration of epinephrine (1 cc. of 1:1,000 solution well diluted) proved of value for certain comatose patients; if well tolerated it may be repeated, on relapse into coma, by venoclysis in isotonic solution of sodium chloride or saline solution with or without quinine dihydrochloride. Epinephrine, however, is not to be used routinely and is probably contraindicated in shock and pulmonary edema. The blood pressure response should be watched carefully and the administration discontinued if the blood pressure rises above 160 or the pulse rate is much accelerated or if other untoward symptoms appear. Intramuscular or oral atabrine may be used to supplement quinine, but they say that they have more confidence in quinine dihydrochloride administered intravenously, supplemented as soon as possible by oral quinine, than in any other specific in these cases.

More recently, MacDonald⁵ of the British army has advised combined operations in attacking malaria by using epinephrine intravenously to drive parasites out into the open and quinine at the same time orally, subcutaneously or intravenously. Marsh⁶ has stated that quinine and epinephrine given intravenously are usually necessary in the treatment of cerebral malaria, although prophylaxis with quinacrine daily will almost always prevent blackwater and cerebral malaria. Although the statements by Fitz-Hugh, Pepper and Hopkins summarize the essential features of using quinine intravenously in malaria, neither these authors nor

¹ From the Department of Pharmacology and Therapeutics, Stanford University School of Medicine, San Francisco, and the Permanent Foundation Hospital, Oakland, Calif.

1. Brahmachari, U. N.: Dangers of Rapid Intravenous Injection of Quinine Solution, *Lancet* 2: 175 (July 22) 1922; Dangers of Rapid Intravenous Injection of Concentrated Solutions of Quinine Dihydrochloride, *J. Trop. Med.* 25: 209 (July) 1922; A Note on Blood Pressure During Intravenous Injections of Quinine, *Lancet* 2: 1301, 1920. Simpson, W. M., and Segebel, J. L.: Cerebral Malaria: A Report of 12 Cases Encountered at a U. S. Naval Base Hospital, U. S. Nav. M. Bull. 41: 1596 (Nov.) 1943. Macey, K. I.: Limitations to the Use of Quinine Intravenously in Treatment of Malaria, *Pub. Health Rep.* 37: 693 (March 24) 1922; The Status of Intravenous Therapy: Limitations to the Use of Quinine Intravenously in the Treatment of Malaria, *J. A. M. A.* 91: 1372 (Nov. 3) 1928. Brosius, O. T.: Estivoautumnal Malaria, *ibid.* 125: 168 (May 13) 1944. Most, H., and Meleney, H. E.: *Isleparum Malaria: The Importance of Early Diagnosis and Adequate Treatment*, *ibid.* 124: 71 (Jan. 8) 1944.

2. Dreisbach, R. H., and Hanzlik, P. J.: Antagonists for the Circulatory Depression of Quinine Injected Intravenously and the Implied Cholinergic Action, and Nature and Importance of the Vasodilatation in the Depression, *J. Pharmacol. & Exper. Therap.* 83: 167, 1945.

3. Escher and Villequez: Intravenous Injection of Quinine in Malaria, *Presse med.* 39: 453 (March 28) 1931.

4. Fitz-Hugh, T.; Pepper, D. S., and Hopkins, H. U.: The Cerebral Form of Malaria, *Bull. U. S. Army M. Dept.*, 1944, No. 83, p. 39.

5. MacDonald, D. C.: Adrenalin in the Treatment of Malaria, *Brit. M. J.* 1: 567 (April 21) 1945.

6. Marsh, Frank: Treatment of Cerebral Malaria, *Brit. M. J.* 1: 641 (May 5) 1945.

Escher and Villequez report details of possible circulatory and other changes in their patients, and MacDonald and Marsh give neither such details nor the dosage of drugs. These are common deficiencies in other clinical reports.

Therefore it was believed desirable to obtain some information on the possible general effects and tolerance of clinical intravenous injection of quinine-epinephrine, partly for confirmation or refutation of the clinical claims and partly to obtain familiarity with it in the event that such injection might be indicated in treating malaria. Safeness of the procedure was an important consideration. Such trials were made by one of us (C. C. C.) and his associates with 7 male patients from 18 to 48 years of age. In 3 of these (M. P., H. H. and C. W.) the initial circulatory state was about normal, although M. P. had a high pulse rate. In a fourth patient (C. A.) the initial blood pressure was above normal, the heart rate being about normal. Three other patients were in coma with circulatory depression, as the result of acute

at the end of thirty minutes. The diastolic pressure was also increased at the end of fifteen minutes in 4 of the patients, i. e. from about 16 to 33 per cent in excitable C. W., about 20 per cent in P. F. (paraldehyde), about 11 per cent in P. F. (alcohol) and about 14 per cent in R. S. (pentobarbital). Recoveries were incomplete at the end of thirty minutes. Three patients (M. P., H. H. and R. S.) showed no demonstrable changes in systolic blood pressure, and 2 (M. P. and H. H.) in diastolic pressure. No other effects were observed in 3 patients (M. P., H. H. and C. A.) and the coma remained unchanged in the 3 (P. F., P. F. and R. S.) who had taken alcohol, paraldehyde and pentobarbital. The most pronounced reaction occurred in the most excitable patient (C. W.), who was apprehensive and excited before the injection began. It is doubted whether the restlessness, suffocation, dyspnea and screaming which occurred one minute later were due to the procedure; complete recovery was present at the end of forty-five minutes. Respiration was

Clinical Effects of Quinine-Epinephrine Intravenously

Patient	Age, Yrs.	Diagnosis	Quinine Disulfate 0.5 Gm. plus Epinephrine 1.0 Mg. Intravenously						Other Effects
			Before Injection		15 Minutes After Injection		30 Minutes After Injection		
			Blood Pressure§	Heart Rate, per Min.	Blood Pressure	Heart Rate, per Min.	Blood Pressure	Heart Rate, per Min.	
M. P.*	48	Hepatic cirrhosis	120/ 60	120	120/ 60	125	120/ 60	120	None
H. H.*	45	Toxic psychosis	120/ 70	80	120/ 70	80	120/ 70	80	None
C. W.	28	Spinal cord transection; pneumonia; apprehension; temp., 104 F. (Negro)	110/ 60	76	150/ 80(1)†	88	175/ 76(20)†	110	Restlessness, suffocation, dyspnea, screaming in 1 min., quiet but flushed in 20 min., recovered in 45 min. after injection
C. A.	46	Nephrosis	190/105	88	200/100	96	190/105	88	None
P. F.	24	Acute paraldehyde intoxication deep coma	80/ 50	90 (Resp. 8)	90/ 60	110 (Resp. 8)	100/ 60	90 (Resp. 8)	Coma unchanged; after 2 doses of metrazol within ½ hour after quinine-epinephrine consciousness regained; blood pressure 120/60, with complete recovery in a few hours
P. F.	27	Acute alcoholism; possible subdural hematoma; coma	60/ 45	90 (Resp. 10)	82/ 50	115 (Resp. 18)	80/ 50	88 (Resp. 20; Temp. 98.6 F.)	Coma unchanged; complete recovery following morning
R. S.	18	Sodium pentobarbital intoxication; deep coma	100/ 70	90 (Resp. 10)	100/ 80	94 (Resp. 10)	100/ 75	86 (Resp. 10)	Coma unchanged; complete recovery in 24 hours

* Quinine-epinephrine in 300 cc. of isotonic solution of sodium chloride; in 250 cc. in the remaining patients.
§ Systolic/diastolic in mm. Hg throughout. † Minutes after injection.

intoxication from alcohol, pentobarbital and paraldehyde. One injection of the following mixture was made into the median basilic vein in each patient: 0.5 Gm. of quinine bisulfate and 1.0 mg. of epinephrine hydrochloride in 250 cc. (5 patients) or 300 cc. (2 patients) during a period of thirty minutes. Blood pressure, pulse rate and respiration were observed before and at the end of fifteen minutes and of thirty minutes after the injection was begun. All patients were observed for at least twenty-four hours afterward. A summary of the essential data is presented in the accompanying table.

It is seen that the most consistent change was an increase in pulse rate fifteen minutes after the injection was started, i. e. from about 4 to 27 per cent in 6 of 7 patients. At the end of the injection (thirty minutes) the pulse rate had returned to the initial rate in all but the most excitable patient (C. W.). The systolic blood pressure was appreciably increased in 4 of the patients, i. e. about 5 per cent in C. A., in whom the initial pressure was the highest, 12.5 per cent in P. F. in paraldehyde coma and 37 per cent in P. F., in alcoholic coma, and 50 per cent in C. W., initially excited. Again these increases occurred at the end of fifteen minutes, with recoveries practically to the initial levels

variably affected in the comatose patients, being unchanged in P. F. (paraldehyde) and in R. S. (pentobarbital) and increased in P. F. (alcohol). Presumably the rather rapid recovery of consciousness and blood pressure was due to the metrazol in P. F. comatose from paraldehyde. The patients in alcoholic and pentobarbital comas who did not receive this treatment required much longer periods for recovery. Thus, in general, the principal reaction to a single injection of quinine-epinephrine, in the doses used, in conscious and comatose patients was a fleeting circulatory stimulation, principally an increase in heart rate; the blood pressure was moderately, though variably and temporarily, increased in roughly one half of the patients. Since this was confirmatory of the extensive experiences of Escher and Villequez and of Fitz-Hugh, Pepper and Hopkins, further trials were not believed necessary. We had no opportunity of trying the quinine-epinephrine mixture in malarial coma, but the mixture used by us was not detrimental, at least, in comas of drug intoxications.

It is of interest to compare the dosage of quinine, as base, used by us and the other reporters, since the salts used were different with considerable variation in

content of quinine. Generally the safeness of the procedure would vary inversely and its antimalarial efficiency directly as the dosage. On an equimolecular basis the amounts of quinine base in the single doses of the different quinine salts were as follows: 0.477 to 0.762 Gm. in 0.5 to 0.8 Gm. of quinine hydrochloride used by Escher and Villequez; 0.286 to 0.619 Gm. in 0.3 to 0.65 Gm. of quinine dihydrochloride used by Fitz-Hugh, Pepper and Hopkins; 0.345 Gm. in 0.5 Gm. of quinine bisulfate used by us; 0.338 Gm. in 0.7 Gm. of quinine sulfate for a 70 Kg. adult based on the standard dose used in animals by Dreisbach and Hanzlik. Accordingly, our doses, i. e. the clinical tried by us and those based on experimental work by Dreisbach and Hanzlik, which were close, were smaller than those used by the other reporters. Smaller doses would be less hazardous intravenously, but their antimalarial efficiency would also be lower, except that this disadvantage would be offset by a lower toxicity, which would permit injecting more doses. However, there seems to be no doubt that the higher range of dosage used by Escher and Villequez and by Fitz-Hugh, Pepper and Hopkins was used successfully, except that their maximum doses appear undesirable for general recommendation.

RECOMMENDED PROCEDURE

Although we did not test the dose of 0.5 Gm. quinine hydrochloride or dihydrochloride (0.477 Gm. base), partly because of the unavailability of these salts and partly because we were guided by the experimental results of Dreisbach and Hanzlik with a smaller dose, this had been included in the extensive trials of Escher and Villequez and of Fitz-Hugh, Pepper and Hopkins and used previously by others. It is believed to be sufficiently established and safe to be worthy of recommendation as emergency, or to initiate, medication for comatose patients with the embolic or cerebral malaria. The preferred procedure is as follows: 0.5 Gm. of quinine hydrochloride or dihydrochloride (0.69 Gm. of quinine bisulfate) and 1 mg. of epinephrine in 250 cc. of isotonic solution of sodium chloride injected during not less than thirty minutes. Not more than two or three such injections, or a total of 1 to 1.5 Gm. of quinine, should be given, properly spaced, within twenty-four hours. When consciousness is restored, medication is to be continued by mouth or through a nasal catheter as suggested by Fitz-Hugh, Pepper and Hopkins. The intravenous injection of quinine is probably contraindicated in severe shock, especially hemorrhagic, pulmonary edema, cardiovascular disease, cyanosis, severe anemias, pregnancy and possibly other conditions.

CONCLUSIONS

1. Intravenous injection of quinine has been widely used in the treatment of the embolic or cerebral form malaria with coma, but the safeness of the procedure has been considerably debated.

2. Experimentally it has been established that the circulatory depression accompanying such injections can be effectively antagonized by injecting epinephrine together with the quinine, but data indicating the clinical reactions to such a mixture have been lacking.

3. Trials made by us with a quinine-epinephrine mixture on 7 patients, 3 of whom were in coma from various drug intoxications, resulted in a fleeting circulatory stimulation, chiefly an increase in heart rate, the blood pressure being moderately, though variably and temporarily, increased in roughly one half of the

patients. In the majority there were no other demonstrable effects, and the comas were unaffected. These results sustain the claims of proponents of such medication.

4. Accordingly, quinine-epinephrine intravenously is believed to be sufficiently established and safe as emergency, or initial, medication for comatose patients with embolic or cerebral malaria, in agreement with recent practices of military medical services of different countries, which claim further that such medication is essential or indispensable in this type of malaria.

5. The preferred procedure is 0.5 Gm. of quinine hydrochloride or dihydrochloride (or 0.69 Gm. quinine bisulfate) and 1 mg. of epinephrine in 250 cc. of isotonic solution of sodium chloride injected in not less than thirty minutes. Not more than two or three such injections (total 1 to 1.5 Gm. of quinine hydrochloride) should be given, properly spaced, within twenty-four hours. When consciousness is restored, medication is to be continued by mouth or through a nasal catheter.

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CLINICAL TETANUS

A STUDY OF FIFTY-SIX CASES, WITH SPECIAL
REFERENCE TO METHODS OF PREVENTION
AND A PLAN FOR EVALUATING
TREATMENT

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Tetanus continues to be a serious disease in spite of the availability of practical methods for its prevention and the use of improved serums and drugs in its treatment. In 1942 there were recorded 698 deaths in the United States from this disease,¹ and probably the number of cases was two to three times this figure.

Statistical studies dealing with large numbers of cases² have not been particularly useful in evaluating the results produced by any given program of treatment. The need for better methods to evaluate the results from the treatment of tetanus has become more urgent than ever because of the advent of purified antitoxins, recently developed anticonvulsant drugs and new chemotherapeutic agents.

Since the outcome of tetanus, either treated or untreated, depends in large measure on the severity of the disease, one must consider this factor in the evaluation of treatment. From an analysis of the clinical features of 56 cases of tetanus treated in the Infants' and Children's Hospitals from 1924 to 1944 it was possible to place the cases in a series arranged according to the severity of the infection. Such an arrangement enables one to ascertain readily the effects of treatment on the expected course of the disease. One of my purposes in this article is to describe the method of analysis that was used and to discuss some of the clinical implications derived from this analysis. The second purpose is to show the desirability of producing and continuously maintaining active immunity against tetanus as disclosed by a study of the initial lesions in these patients.

From the Department of Pediatrics, Harvard Medical School, and the Infants' and Children's Hospital.

1. Vital Statistics of the United States 1942, United States Department of Commerce, Bureau of the Census, 1944, part 1, table 2.

2. Golla, F.: Analysis of Recent Tetanus Statistics, *Lancet* 2: 966 (Dec. 29) 1917. Calvin, J. K., and Goldberg, A. H.: Prognosis of Tetanus, *J. A. M. A.* 94: 1977 (June 21) 1930. Huntington, R. W., Jr.; Thompson, W. R., and Gordon, N. H.: Treatment of Tetanus with Antitoxin: Analysis of Outcome in 642 Cases, *Ann. Surg.* 105: 93 (Jan.) 1937.

METHODS

Each record was studied in its entirety in order to verify the diagnosis and to determine any unusual features. Then an abstract of each case was made covering only the following four features, which have been stressed by numerous investigators as the most useful indexes of the severity of the infection:³

1. The incubation period.
2. The length of time from the onset of symptoms to definite episodes of generalized muscle spasms.
3. The severity of the infection as judged by examination of the patient at the time of admission to the hospital.
4. The frequency and severity of spasms or convulsions after sedation, and the amount of sedation required each day.

No notation as to the method of treatment or the final outcome was made in the abstracts in order to eliminate any conscious or unconscious bias in analyzing the cases. Since all the patients were between 5 days and 12 years of age, the age factor was not included for analysis.

The abstracts were studied, using the four criteria mentioned previously, and the most weight was given to the length of time from the first symptoms until definite episodes of generalized muscle spasms occurred, and to the frequency and severity of spasms after sedation. Then the cases were arranged in a series from the most severe to the mildest. Several months later,

using the same abstracts, the cases were again graded as to severity, and no case differed in rank by more than three from its previously assigned position. Thus the reliability of the method was demonstrated.

RESULTS

Fifty-six cases were reviewed. There were 24 deaths, yielding a gross mortality rate of 43 per cent. The distribution of the cases and of the deaths in three

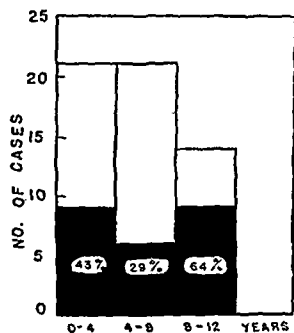


Fig. 1.—Distribution of cases and deaths by age groups.

age groups is shown in figure 1. There were 39 males and 17 females, with mortality rates of 46 per cent and 35 per cent respectively. Nineteen patients were classified as having severe, 12 as having moderate and 37 as having mild generalized tetanus. Three patients had only local tetanus. In only 1 patient was the diagnosis doubtful. This patient, who died, is included in all figures, since treatment for tetanus was given.

The incubation period in patients classified as having severe generalized tetanus varied from five to ten days, with an average of seven and a half days. (The incubation period was known in 12 of these 19 patients.) The duration from the onset of symptoms to definite episodes of generalized spasms in these patients averaged one day, with a range from one-half to two and a half days. All these patients had pronounced trismus, generalized increase in muscle tone and great hyperirritability, with easily induced spasms or convulsions on admission, and all had severe spasms and 75 per cent had convulsions in spite of large doses of sedatives.

For patients with moderately severe tetanus the incubation periods were not definitely known, except for nine days in 2 patients. Generalized spasms occurred from one to three and a half days, with an average of

two and a half days, after the onset of symptoms. All had trismus, increased muscle tone and hyperirritability on admission, and after moderate to large doses of sedatives 6 patients had convulsions and all except 1 had severe spasms. In the patients with mild infections the progress of symptoms was slower and the severity of the spasms was less than in patients with severe and moderately severe tetanus.

The end result, the total amount of antitoxin and its routes of administration, the chief and contributing causes of death and the duration of hospital stay for 37 patients are shown in figure 2. In this chart the cases are arranged in order of decreasing severity of the disease. The 19 patients not shown had mild nonfatal infections. Only 1 of these 19 patients received anti-

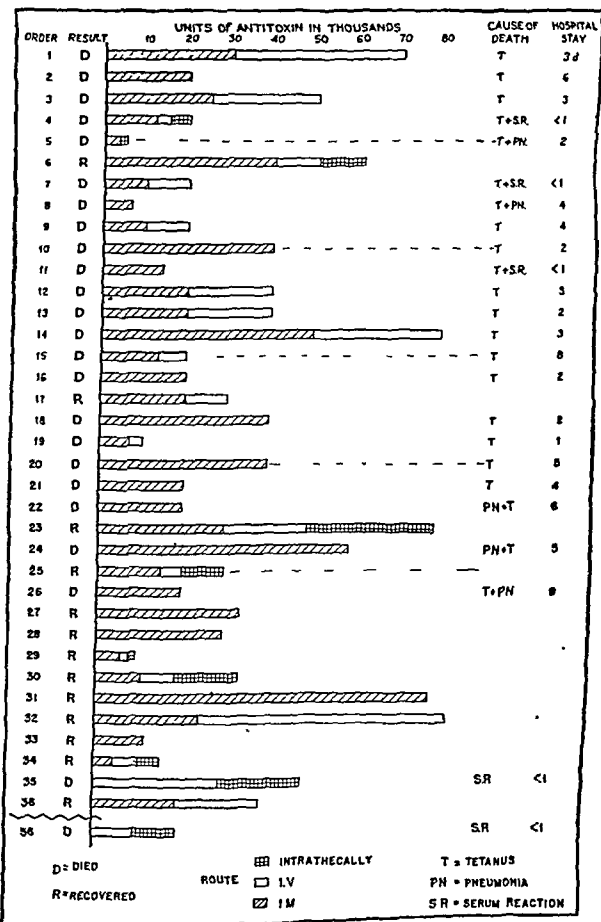


Fig. 2.—Cases of tetanus arranged in order of decreasing severity.

toxin intrathecally, and that patient had no reaction from the therapy. Although the order in which the cases in figure 2 were arranged was made without reference to the final outcome, it is interesting to note that, irrespective of the treatment given, for the first 25 patients death was the general outcome, whereas nearly every one of the patients with order numbers higher than 25, that is, with milder infections, recovered.

COMMENT

The Value of Arranging Cases in Order of the Severity of the Infection.—A reliable index of the relative severity of the disease can be obtained only by comparing several clinical features of the illness in any given patient with the same features in previous patients. In order to establish the rank of one patient with respect to

3. Huntington, R. W., Jr.: Treatment of Tetanus, Yale J. Biol. & Med. 3: 207 (Jan.) 1931. Spaeth, R.: Clinical Study of Tetanus, Am. J. Dis. Child. 60: 103 (July) 1940. Firor, W. M.: Tetanus, in Cecil, R. L.: A Textbook of Medicine, ed. 6, Philadelphia, W. B. Saunders Company, 1943, p. 193.

others in the series, knowledge of the individual records is essential. Therefore, exact comparisons between series prepared in different clinics would not be possible. However, such an arrangement is practically the only useful aid in evaluating the various methods of treatment employed in any given clinic and in planning individualized therapy for each patient.

It is clear from a study of figure 2 that improvement in treatment can be confirmed by the results obtained only in patients with severe infections, that is, in patients classified with those whose infections previously were generally fatal. The superiority of a new method of treatment would be demonstrated if it enabled several patients to survive infections as severe as those in the first 25 patients shown in figure 2.

The Amount of Tetanus Antitoxin.—Study of figure 2 revealed no evidence that amounts of antitoxin up to 80,000 units were more effective than 30,000 units. In accord with this observation are the immunologic data of Spaeth.⁴ However, Vener and Bower,⁵ who reported 100 cases of tetanus with the low gross mortality rate of 29 per cent, advised a minimum of 200,000 units of tetanus antitoxin.

Route of Administration of Antitoxin.—Tetanus antitoxin was administered intrathecally to 5 of the 25 most severely ill patients and 3 of these 5 survived, whereas in the same group only 1 patient of the 20 given antitoxin intravenously or intramuscularly recovered. This evidence supports the contention that tetanus antitoxin injected into the subarachnoid space is more effective in the treatment of human beings with severe tetanus than an equivalent amount administered by other routes. However, the superiority of this route of administration of antitoxin is not so definite when one studies the distribution of the patients who recovered as shown in figure 2. Dietrich⁶ felt that many patients with tetanus, some of them with mild infections, died much sooner after being given antitoxin intrathecally or intravenously than they could have from untreated tetanus. Our cases support this point of view as regards tetanus antitoxin intrathecally. Patient E. B. illustrates that tetanus severe enough to have caused convulsions that produced fractures of four dorsal vertebrae can be survived without specific therapy, since his symptoms were subsiding by the time antitoxin was given:

E. B. (order number 33 in figure 2), a boy aged 6½ years, developed stiffness of the muscles of his neck and face eleven days before admission. Throughout the next six days there were increasing trismus and more generalized muscle spasms. On each of the last four days preceding admission a generalized convulsion occurred. There had been no fever, nor had any specific treatment been given. When admitted to the hospital on the eleventh day of his illness the patient displayed trismus, risus sardonius, generalized increased muscle tone and a mid-dorsal kyphosis. Although sudden stimuli produced painful generalized spasms, 0.8 Gm. of sodium amytal in divided doses each day produced satisfactory relaxation during the first few hospital days, and no sedation was required thereafter. Following negative tests for sensitivity, 12,000 units of tetanus antitoxin was injected intramuscularly on the day of admission. Roentgen examination of the spine revealed compression of the bodies of the fourth, sixth and seventh dorsal vertebrae and fragmentation of the body of the fifth dorsal vertebra. The symp-

toms of tetanus, which were subsiding by the time of admission, gradually disappeared, and the compression fractures of his vertebral bodies responded satisfactorily to treatment.

Of the group classified as having mild infections, only 2 patients died. These were 2 boys (order numbers 35 and 56) who were given tetanus antitoxin intrathecally. Therefore it would seem that antitoxin intrathecally was chiefly responsible for these deaths. The case report of 1 of these 2 is as follows:

G. R. (order number 56 in figure 2), a boy aged 11 years, was admitted to the hospital because for the past three days he had had a right torticollis, inability to open his mouth more than 2 cm. and pain in his right cheek. Except for slight retraction of his head backward and to the right, physical examination revealed no additional findings. There was no irritability or spasm of any other muscles, no dysphagia, nor any additional neurologic signs. The consensus was that the most probable diagnosis was mild tetanus, and he was treated according to the usual method of treatment in use at that time. Intradermal tests for sensitivity to horse serum were negative. Under ether anesthesia clear spinal fluid was removed by lumbar puncture and a smaller volume of tetanus antitoxin, equivalent to 10,000 units, was allowed to flow slowly into the subarachnoid space. At the same time 10,000 units of antitoxin was given intravenously. His temperature rose rapidly from 100 F. before the serum administration to 106 F.

TABLE 1.—Results of Treatment

Route of Administration	Severe + Moderate Cases Order Numbers 1-31		Mild Cases Order Numbers 32-56	
	Cases	Deaths	Cases	Deaths
Intramuscularly only.....	14	11	11	0
Intravenously plus intramuscularly...	10	9	10	0
Intrathecally plus intravenously and intramuscularly.....	7	2	4	2

four hours later. The patient became restless, but with no generalized spasms characteristic of tetanus. About ten hours after the serum had been given, the patient had a convulsion, then relaxed, had irregular respirations and died of respiratory failure.

Table 1 summarizes the results of therapy according to the route of administration of tetanus antitoxin for patients divided into two groups: severe plus moderate infections and mild infections. Table 1 illustrates the apparent superiority of the administration of tetanus antitoxin intrathecally, but of greater importance is its clear exposition of the serious nature of the reactions which may result from this type of treatment.

Type of Sedation.—Various types of sedation were employed in the treatment of the patients in this series. In general, solution of tribromoethanol and various barbiturates were employed, and no definite correlation could be made between the type of sedation and the final result. The sedation used for A. F. and C. R., who survived severe infections, is outlined in their case reports:

A. F. (order number 6 in figure 2), a girl aged 3 years, had an infected laceration of the scalp. The incubation period was seven days. Within twelve hours after the first symptoms a severe generalized convulsion occurred. The patient was sent to the hospital because of three more convulsions in rapid succession. At the time of admission she was having a convulsion which required ether anesthesia to control. Tetanus antitoxin 10,500 units was injected slowly into the lumbar subarachnoid space, an equal amount was given intravenously and 7,500 units was injected around the wound. For one hour

4. Spaeth, R.: Serum Therapy of Tetanus, with Special Reference to the Course of Antitoxin Titers in the Blood After Treatment with Specific Serum, *Am. J. Dis. Child.* 61: 1146 (June) 1941.

5. Vener, H. I., and Bower, A. G.: Clinical Tetanus: Treatment in 100 Consecutive Cases with a Net Mortality Rate of 19 per Cent, *J. A. M. A.* 116: 1627 (April 12) 1941.

6. Dietrich, H. F.: Tetanus in Childhood, with Special Reference to Treatment, *Am. J. Dis. Child.* 59: 693 (April) 1940.

after these procedures the patient was in poor condition as the result of vasomotor collapse. During each of the first eight hospital days she was given from 6.5 to 15 Gm. of sodium bromide and from 50 to 100 cc. of a 25 per cent solution of magnesium sulfate intramuscularly. In spite of this sedation two to three convulsions occurred each day. During this period an additional 32,500 units of antitoxin was administered intramuscularly in divided doses. Lumbar punctures were done one to three times daily. Serum sickness, with temperatures reaching 106 F., was present on the ninth, tenth and eleventh days. A few days later no sedation was required. The patient was discharged on the forty-third day.

C. R. (order number 6 in figure 2), a boy aged 2½ years and weighing 12.3 Kg., developed dysphagia, trismus and stiffness of the muscles in his back and the right side of his neck, although there was no history of an injury. The following day he was brought to the hospital, where physical examination revealed inability to open the mouth more than 1 cm., spasm of all muscle groups, hyperactive reflexes, enlarged cervical lymph nodes and a nearly healed abrasion over the right knee. Shortly after admission, within thirty-six hours of the onset of symptoms, the patient began to have severe generalized spasms accompanied by cyanosis in spite of sedation. After tests for sensitivity were negative, 10,000 units of tetanus antitoxin was given intravenously and 10,000 units intramuscularly. On the seventh hospital day another 10,000 units of antitoxin

indicated for a patient with clinical tetanus merely because the lesion may be the site of elaboration of the toxin.

This does not mean that proper surgical care of injuries, irrespective of the presence of tetanus, is not essential when the nature of the injury is such as to require operative intervention. Likewise it is to be stressed that any injury which might result in tetanus should be given adequate surgical treatment at the time the injured person is first seen by a physician.

THE PREVENTION OF TETANUS

The methods of preventing tetanus are the proper immediate surgical treatment of injuries, passive immunization of injured patients with tetanus antitoxin and active immunization against tetanus. The latter may be accomplished by means of an initial series of injections, to be followed by "booster" doses of toxoid at the time of injury or by means of toxoid injections so spaced as to maintain adequate protection continuously. A consideration of the types of injuries constituting the probable ports of entry for tetanus spores in these 56 cases enables one to evaluate the methods of preventing tetanus.

The presumed ports of entry are given in table 2.

Group A, constituting 20 per cent of all the cases, consisted of injuries that usually would be treated by a physician and that were of such a nature that many physicians would feel it essential to give passive immunization with tetanus antitoxin or a "booster" injection of tetanus toxoid to patients previously actively immunized. Hence, theoretically, these 11 cases could have been prevented by active or passive immunization. In the present series only 1 patient (order number 11 in figure 2) was given passive immunization. The day after she sustained a compound fracture of her arm she was given 1,500 units of tetanus antitoxin, an amount generally conceded to be inadequate when an injury with much devitalized tissue is present.

Group B, constituting 20 per cent of the cases, represented injuries for which a physician was often not consulted and which are so infrequently accompanied by any sequelae that it is unlikely that passive immunization would be used. A physician might well use a "booster" dose of toxoid if the patient had been previously actively immunized. Hence, reliance on the use of passive immunization would probably not have prevented any of these 11 cases. It is doubtful if reliance on the method requiring the use of "booster" doses of toxoid would have prevented all of them, because medical advice was so seldom sought.

Group C, containing 60 per cent of the cases, presented injuries from which tetanus could not have been prevented by reliance on either passive immunization or "booster" doses of toxoid, because either the injury was unknown or was of such a nature that these methods of preventing tetanus would not ordinarily be utilized.

Therefore it is evident that tetanus will be most satisfactorily controlled by a program for active immunization which will produce and constantly maintain a high degree of immunity. An additional dose of toxoid should be given whenever an injury particularly prone to result in tetanus is sustained, because, at the present time, insufficient evidence is available to determine whether or not such a measure can be safely omitted, although infection with tetanus organisms probably would act as a "booster" dose. The most practical

TABLE 2.—Injuries Resulting in Tetanus

Group	Injuries	Percentage of All Patients
A	<ul style="list-style-type: none"> 5 Puncture wounds..... 2 Lacerations..... 2 Compound fractures..... 1 Crushed finger..... 	20
B	<ul style="list-style-type: none"> 3 Cuts on foot..... 3 Abrasions..... 2 Splinters in thigh..... 2 Blisters on foot..... 1 Minor burn..... 	20
C	<ul style="list-style-type: none"> 16 No injury located..... 7 Following vaccinations..... 5 Minor cuts on hand..... 5 Ophthalmia..... 1 Boil on leg..... 	60

was administered intramuscularly. During the first thirteen days repeated doses of solution of tribromoethanol were used. A total of 1,400 mg. per kilogram of body weight was given during the first four days and 1,070 mg. per kilogram of body weight during the rest of the period. Because freedom from spasms could not be obtained through the use of solution of tribromoethanol alone, a 25 per cent solution of magnesium sulfate was injected intramuscularly repeatedly during the period from the fourth to the thirteenth day. The maximum amount given during a twenty-four hour interval was 100 cc. and the total amount used was 420 cc. The patient was discharged after fifty-two days in the hospital.

Surgical Treatment.—In these 56 patients surgical débridement of the site of the initial lesion was carried out on 9 patients classified as having severe infections without influencing the fatal course of the disease and on 3 patients with mild infections, all of whom recovered. The futility of surgical excision of the site of experimental tetanus infections in animals, once symptoms have appeared, has been conclusively demonstrated by Abel and his co-workers.⁷ Adequate amounts of antitoxin alone prevent the spread of tetanus toxin from its site of elaboration. This fact is manifested by the efficacy of prophylaxis by means of passive immunization. Hence there is no evidence that surgical intervention is

7. Abel, J. J., and Hampil, B.: Researches on Tetanus: Some Historical Notes on Tetanus and Commentaries Thereon, *Bull. Johns Hopkins Hosp.* 57: 343 (Dec.) 1935.

method of active immunization to maintain a high degree of immunity against tetanus is still to be determined, but the studies of Miller and Saito⁸ and of Peshkin⁹ indicate methods by which serologically adequate immunity can be achieved.

It is especially important to be sure that any patient who is given tetanus antitoxin is actively immunized subsequently. Several of the patients reviewed had received prophylactic tetanus antitoxin months or years previously, and the resulting sensitivity made serum therapy more difficult and increased the risk of serious reactions. The availability of serums prepared in other animals besides the horse has not entirely eliminated this problem.

SUMMARY AND CONCLUSIONS

A method for determining the relative severity of each infection in a series of patients with tetanus was adopted. Arrangement of 56 children with tetanus in order of the severity of the infection assisted in evaluating the various methods of treatment employed:

1. There was no evidence that administration of tetanus antitoxin in amounts up to 80,000 units was more effective than amounts of 30,000 units.

2. The administration of tetanus antitoxin intrathecally was suggestively, but not definitely, more effective than giving the same amount of antitoxin by the intramuscular or intravenous routes.

3. Fatal reactions occurred from tetanus antitoxin given intrathecally to some patients who in all likelihood would have survived their tetanus infections. Hence tetanus antitoxin should not be used intrathecally in any but the most severe cases, if it should be used at all, until a preparation is available which is incapable of producing severe reactions.

4. Excision of the site of infection, once clinical symptoms of tetanus were present, did not ameliorate the course of the disease.

That further reduction in the incidence of tetanus can be accomplished only by producing and constantly maintaining a high degree of active immunity against this infection was disclosed by a study of the initial lesions in these 56 patients.

8. Miller, J. J., Jr., and Saito, T. M.: Concurrent Immunization Against Tetanus, Diphtheria and Pertussis: A Comparison of Fluid and Alum Precipitated Toxoids, *J. Pediat.* 21: 31 (July) 1942.

9. Peshkin, M. M.: Immunity to Tetanus Induced by a Third Dose of Toxoid Four Years After Basic Immunization, Based on a Study of 25 Allergic Children, *Am. J. Dis. Child.* 69: 83 (Feb.) 1945.

War Neuroses.—One of the most striking phenomena seen in the conversion states, and one almost defying description, is the weird, wobbly, disorganized gait of astasia-abasia, with which so many of these patients are affected. The patient may be capable of perfectly normal movements in the sitting or the horizontal position, even though many of them display constant gross tremors of the legs only with great difficulty. The legs wobble about in every direction; the trunk is agitated by a series of uneven jerks. Time and again the patient seems on the point of losing his balance and toppling over, yet this seldom occurs. At other times the knees seem to give way altogether, causing the patient to sink to the floor. If the patient attempts to stand still, his body bobs up and down continuously. This condition is accompanied by little or no anxiety. The patient struggles persistently to control the wanton movements. He regards the disability as a disease of the nerves and muscles of the legs and does not see the actual relation between his symptoms and his war experience. In some cases the symptom appears as a transitory phase in the anxiety states.—Grinker, Roy R., and Spiegel, John P.: *War Neuroses*, Philadelphia, Blakiston Company, 1945.

THE TREATMENT OF EARLY SYPHILIS WITH PENICILLIN

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The effectiveness of penicillin in the treatment of early syphilis in human beings was first recorded, in a preliminary report, by Mahoney, Arnold and Harris¹ in December 1943. Since then a number of publications² also of preliminary nature have appeared. It is my purpose in the present communication to detail the results of treatment of 96 patients, more than 70 per cent of whom have been observed for a year or more following treatment. These patients were treated between Nov. 17, 1943 and May 18, 1944.

MATERIAL AND PROCEDURE

The series consisted of 92 men and 4 women, 29 of whom were white and 67 Negro patients. They varied in age from 18 to 38 years, approximately two thirds being younger than 25.

Lesions of primary or secondary syphilis were present in every case, and the diagnosis was established in 89 by the demonstration of *Treponema pallidum* in the lesions, and in the other 7 by repeatedly positive serologic tests for syphilis. The approximate duration of the lesions was five to three hundred days, although in some 60 per cent of the patients it was less than thirty days. When treatment was initiated 19 patients were in the seronegative primary stage, 34 in the seropositive primary stage and 43 in the secondary stage. Two patients in the secondary stage had an additional complication, 1 syphilitic iritis, the other syphilitic periostitis of the tibiae. Besides early syphilis, 2 men had acute gonococcal urethritis and a third had suppurative inguinal lymphogranuloma venereum.

All patients were hospitalized and treated identically: they were given sixty intramuscular injections of 20,000 units of penicillin in 1 cc. of saline solution at three hour intervals, day and night, for seven and one-half days, a total of 1,200,000 units. Seventeen different lots of sodium penicillin, supplied by two manufacturers, were employed.

A titrated Kahn test and a Wassermann test of the blood were performed immediately before and after treatment, and these tests were repeated at monthly intervals, or more often, during the period of observation. The cerebrospinal fluid was examined before treatment in every patient and reexamined in most of them six months or more after treatment. Complete blood counts, urine analyses, estimations of nonprotein nitrogen or urea of the blood, icterus indexes and sedimentation rates were made before and after treatment in a large number of the patients.

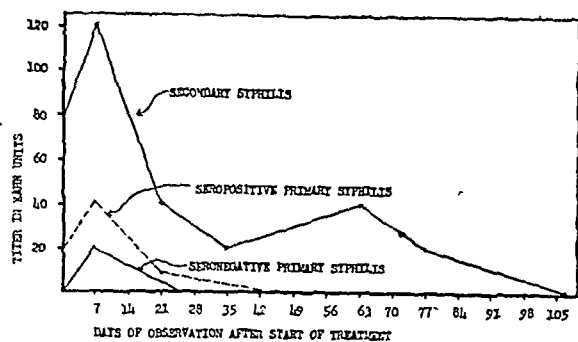
REACTIONS TO PENICILLIN

A Herxheimer reaction occurred in 88 (91.6 per cent) patients during the first day of treatment. In 65 it consisted of fever, chill or chilly sensations, headache

1. Mahoney, J. F.; Arnold, R. C., and Harris, A.: Penicillin Treatment of Early Syphilis, *Am. J. Pub. Health* 33: 1387 (Dec.) 1943.

2. Bloomfield, A. L.; Rantz, L. A., and Kirby, W. M. M.: The Clinical Use of Penicillin, *J. A. M. A.* 124: 627 (March 4) 1944. Wise, C. R., and Pillsbury, D. M.: Penicillin in the Treatment of Syphilis, *Proc. Roy. Soc. Med.* 37: 491 (July) 1944. Mahoney, J. F.; Arnold, R. C.; Sierner, B. L.; Harris, A., and Zwally, M. R.: Penicillin Treatment of Early Syphilis, *J. A. M. A.* 126: 63 (Sept. 9) 1944. Ross, A. O. F.; Nelson, R. B.; Lowrie, E. M., and Collier, H. O. J.: Treatment of Early Syphilis with Penicillin, *Lancet* 2: 845 (Dec. 30) 1944. Binkley, G. W., and Kile, R. L.: Rapid Treatment of Early Syphilis with Small Doses of Penicillin, *Arch. Dermat. & Syph.* 51: 200 (March) 1945. Moore, Mahoney, Schwartz, Sternberg and Wood.³

and malaise. In 1 patient the temperature rose to a height of 105.2 F. but in most it was between 101 and 103 F. The temperature was practically always normal after twenty-four hours in spite of the uninterrupted administration of penicillin. Besides the febrile reaction 21 patients had a temporary exacerbation of the cuta-



Provocative effect of treatment on the titrated serologic test and the pattern of decline to a negative reaction in 3 typical cases.

neous and mucosal lesions, evidenced by increased swelling and redness and frequently by pain in the chancre and the enlarged regional lymph nodes. Two patients had exaggeration of the cutaneous lesions without a febrile reaction.

A number of minor reactions were observed after the first day of treatment. Several patients complained of mild abdominal cramps and nausea, of brief duration, and 2 patients vomited twice. Two patients had a secondary rise of temperature to 101 F. on several days during treatment. Two patients had mild urticaria lasting less than forty-eight hours; 2 had generalized pruritus without eruption; 1 had a papular multiform erythema, distributed over the elbows, forearms, knees and legs, that lasted about two weeks; 3 had herpes labialis and 2 herpes progenitalis following a febrile Herxheimer reaction.

No significant abnormalities of the blood counts, the nonprotein nitrogen, the blood urea or the icterus index were noted. The sedimentation rate was moderately prolonged after completion of treatment in 19 patients; the reason for this was not apparent.

TABLE 1.—Relapses Classified According to Stage of Disease, Type of Relapse and Time of Appearance

Case No.	Stage of Disease	Type of Relapse	Number of Days After Treatment That Relapse Appeared
12	Secondary	Serologic with abnormal CSF *	123
21	Secondary	"	116
24	Secondary	"	105
25	Secondary	"	124
70	Secondary	Mucocutaneous	103
88	Secondary	Mucocutaneous	243
97	Secondary	Mucocutaneous	105
69	Seronegative Primary	Mucocutaneous	401

* Cerebrospinal fluid.

It is important to note that it was not necessary to interrupt or suspend treatment in a single patient on account of reaction.

RESULTS

Early Effects of Treatment.—Dark field examinations were repeated at three hour intervals after the onset of therapy in 26 patients with suitable lesions. Treponemes could not be demonstrated after periods of three

to fifteen hours, and in a majority of instances after nine hours.

Chancres and mucous patches healed and macular eruptions disappeared usually by the time treatment was finished. However, exceptionally large and deeply ulcerated chancres and heavily infiltrated papular eruptions required a longer time for complete healing. In every case the lesions healed without additional treatment, and no evidence of treatment resistance was encountered. The patient with syphilitic iritis and the one with syphilitic periostitis of the tibias both responded rapidly and completely to treatment.

Treatment often had a provocative effect on the serologic tests for syphilis. Immediately after the termination of treatment, 9 of the 19 seronegative primary cases showed a positive serologic test for syphilis, and most of the seropositive primary and secondary cases showed an increase in the titer of the Kahn test.

Reversal of the serologic tests to negative was the end result of a gradual decline in the titer of the quantitative test during the post-treatment period. The accompanying chart demonstrates the provocative effect of treatment on the serologic tests and also the pattern of serologic decline to negativity in typical cases of seronegative primary, seropositive primary and secondary syphilis. In general, the speed of seroreversal depended on the initial titer of the Kahn test; that is,

TABLE 2.—Blood Serologic Response and Relapses in Seronegative Primary Syphilis

Period of Observation, Months	Number of Cases	Serologic Tests for Syphilis			Relapses
		Negative	Doubtful	Positive	
0-6.....	0	..	..	..	..
6-12.....	4	1	0	0	2
12-18.....	11	10	0	0	1
Over 18.....	4	4	0	0	0
Total	19	15	0	0	1

cases with a high initial titer required a longer time to achieve seronegativity than cases with a low initial titer. In the majority, complete reversal of the tests took place within four months following treatment. There were a number of exceptions, especially in secondary syphilis, with high initial titers, in which fixed seronegativity was attained only after a lapse of six to twelve months. In these cases the serologic reactions fluctuated in a narrow zone between negative, doubtful and positive reactions of low titer before a stationary negative state was maintained.

The 2 men who also had acute gonococcal urethritis obtained a complete cure of this infection. There was no apparent therapeutic effect on the lymphadenitis of lymphogranuloma venereum. The lymph nodes suppurated and discharged purulent material and did not heal until the sulfonamide drugs were administered.

RELAPSES

In table 1 are presented the details of 8 cases classified as relapses. Seven occurred in patients with secondary syphilis, and 1 in a patient with seronegative primary syphilis. In 5 patients there was a reappearance of lesions of the skin or mucous membranes, and in 4 of these treponemes were demonstrated in the lesions. All 5 patients also had a concomitant serologic relapse. Another patient suffered only a serologic relapse, but reexamination of his cerebrospinal fluid, which had been normal prior to treatment, showed it to be abnormal. The 2 other patients had a neurologic relapse, accom-

pained by serologic relapse and abnormal cerebrospinal fluid; 1 of these men had acute syphilitic meningitis, the other a monoplegia, and both had had normal cerebrospinal fluid before treatment.

In 6 patients the relapse was noted approximately 103 to 123 days after the inception of treatment, that

TABLE 3—Blood Serologic Response and Relapses in Seropositive Primary Syphilis

Period of Observation, Months	Number of Cases	Serologic Tests for Syphilis			Relapses
		Negative	Doubtful	Positive	
0-6	3	2	0	1	0
6-12	1	1	0	0	0
12-18	24	23	1	0	0
Over 18	6	6	0	0	0
Total	34	32	1	1	0

is, in the fourth month of observation. These included the 2 patients with neurologic relapse, the 1 with serologic relapse and abnormal spinal fluid, and 3 with cutaneous or mucocutaneous relapse. In none of these 6 cases could any serious consideration be given to the question of reinfection, but the other 2 cases (88 and 69) are controversial in this respect and merit special attention.

In case 88 negative serologic tests for syphilis occurred at 106 days after treatment and again at 120, 151, 181 and 213 days. At 207 days the cerebrospinal fluid was normal. At 243 days the titer of the Kahn test rose to 200 units and the patient was returned from another station for study. He had had an attack of acute gonococcal urethritis about two months previously, that is at about 183 days after treatment, and at that time the serologic tests were negative. The urethritis had responded to treatment with the sulfonamide drugs. Examination revealed a generalized lymphadenopathy and a papule of the scrotum in which Treponema pallidum was present. No evidence of a new chancre or of activity at the site of the former chancre was observed.

Patient 69 remained seronegative throughout treatment and up until 123 days following treatment, at which time he was lost from observation because of discharge from the army. Information was later received that this man had been admitted to a civilian hospital on May 19, 1945, about thirteen months after treatment, because of the presence of several penile erosions in

between twelve and fifteen months, 5 between fifteen and eighteen months, and 4 between eighteen and twenty-one months. One case (69) was classified as a relapse, and the facts have been detailed under the subject of relapses.

Table 3 presents the results in 34 patients with seropositive primary syphilis. The last serologic test was negative in 32 of these patients, at the following intervals after treatment: 1 in less than three months, 1 between three and six months, 1 between nine and twelve months, 14 between twelve and fifteen months, nine between fifteen and eighteen months and 6 between eighteen and twenty-one months. One patient had a doubtful Kahn test between twelve and fifteen months. One patient had a positive Kahn test, with a titer of 20 units as compared with a pretreatment titer of 200 units, between three and six months after treatment. No relapses have thus far been observed in this group.

Table 4 presents the results in 43 patients with secondary syphilis. The last serologic test was negative in

TABLE 5—Summation of Blood Serologic Response and Relapses in Entire Series of 96 Cases

Period of Observation, Months	Number of Cases	Serologic Tests for Syphilis			Relapses
		Negative	Doubtful	Positive	
0-6	12	2	2	2	6
6-12	12	10	0	1	1
12-18	55	53	1	0	1
Over 18	17	17	0	0	0
Total	96	82	3	3	8

TABLE 6—Results of Cerebrospinal Fluid Examinations

Stage of Disease	Number of Cases	Pretreatment Fluid		Post Treatment Fluid		Not Examined
		Normal	Abnormal	Normal	Abnormal	
Seronegative primary	19	19	0	18	0	1
Seropositive primary	34	30	4	31	0	3
Secondary	43	36	7	37	3	3
Total	96	85	11*	86	3†	7

* Of the 11 abnormal fluids, 8 were normal on reexamination and have not yet been reexamined.

† The 3 abnormal fluids were found in patients who suffered a clinical or serologic relapse and whose fluid was normal prior to treatment.

32 patients at the following intervals after treatment: 4 between six and nine months, 1 between nine and twelve months, 6 between twelve and fifteen months, 14 between fifteen and eighteen months, and 7 between eighteen and twenty-one months. Two patients had doubtful Kahn tests when last seen, 1 in less than three months and 1 between three and six months. A positive Kahn test was present in 1 patient between three and six months and in another between six and nine months, but in both cases the titer was considerably lower than that found prior to treatment. Seven relapses were observed in this group, and these have been explained in the preceding section under relapses.

Table 5 is a summation of the therapeutic results in the entire series. Twelve patients were observed less than six months, and of these 6 relapsed; of the other 6, 2 were seronegative, 2 seropositive and 2 had a doubtful Kahn test when last seen. Twelve more patients were observed between six and twelve months; in this group there was 1 relapse, and 10 were seronegative and 1 seropositive at the last examination. Among the 72 patients observed longer than twelve months there was 1 relapse; 70 were seronegative and 1 had a doubtful Kahn test when last examined.

TABLE 4—Blood Serologic Response and Relapses in Secondary Syphilis

Period of Observation, Months	Number of Cases	Serologic Tests for Syphilis			Relapses
		Negative	Doubtful	Positive	
0-6	9	0	2	1	6
6-12	7	5	0	1	1
12-18	20	20	0	0	0
Over 18	7	7	0	0	0
Total	43	32	2	2	7

which treponemes were demonstrated. On May 21, 1945 the Kahn test of the blood was positive (20 units) and the cerebrospinal fluid was normal. No exact information was obtainable as to the location of the new lesions in relation to the original chancre.

LATE EFFECTS OF TREATMENT

Table 2 presents the results in 19 patients with seronegative primary syphilis. Of these, 18 were seronegative when last examined, 2 between six and nine months after treatment, 2 between nine and twelve months, 5

CEREBROSPINAL FLUID EXAMINATIONS

Eleven of the 96 patients had an abnormal spinal fluid prior to treatment, as shown in table 6. In 6 patients the abnormality consisted solely of an increased cell count, between 9 and 14 cells per cubic millimeter, and in the other 5 there was a positive complement fixation reaction. Eight of these patients (5 with pleocytosis and 3 with positive complement fixation reaction) had a normal cerebrospinal fluid between 179 and 472 days after the onset of treatment. The other 3 patients have not as yet had a reexamination of the fluid.

The only abnormal cerebrospinal fluids among the 89 examined subsequent to treatment were found in 3 patients who suffered a relapse in the fourth month of observation; these have already been described in the section on relapses.

COMMENT

In both intensive penicillin therapy³ and intensive arsenotherapy⁴ it has been shown that immediate satisfactory response, as indicated by disappearance of treponemes, healing of lesions and reversal of serologic tests, is no criterion of ultimate satisfactory outcome. Grossly inadequate doses of the treponemicides produce immediate results similar to those obtained with therapeutically adequate doses. The effectiveness of a given treatment schedule must be judged by the incidence of relapse, which is greatest in the first six months after treatment, and by prolonged observation of patients to make certain that early satisfactory progress is maintained permanently.

Six of the eight relapses in the present series occurred in the fourth month of observation and were undeniably relapses rather than reinfections. Patient 88 (secondary syphilis) relapsed about eight months after treatment, and patient 69 (seronegative primary syphilis) about thirteen months after treatment. Both these men admitted frequent opportunity for reinfection, both had been seronegative for some time, and both had a normal cerebrospinal fluid on reexamination. Since the rigid criteria for reinfection could not be met, these cases are considered relapses in the present discussion. It follows, then, that the incidence of observed relapse in the present series of 96 patients was 8.3 per cent. Furthermore, it is significant that the incidence of relapse, by stage of disease, was as follows: in seronegative primary syphilis, only 1 (5.3 per cent) of 19 patients; in seropositive primary syphilis, none of 34 patients; and, in secondary syphilis, 7 (16.3 per cent) of 43 patients.

The patients followed for a period longer than twelve months and up to twenty months present a most reassuring serologic and clinical picture. Among 72 such patients (table 5) 70 were seronegative and 1 had a doubtful Kahn test when last examined. Of the eight relapses in the entire series, only 1 occurred after twelve months, and this patient (69) may have had a reinfection. The cerebrospinal fluid was normal in all 72 patients after treatment. Large accumulated experience with intensive arsenotherapy has revealed not only that the highest incidence of relapse occurs in the first six months following treatment, but that patients who are clinically and serologically well after twelve months of observation seldom suffer a relapse at a later period. Since the pattern of therapeutic response to intensive penicillin therapy in early syphilis is practically identical

with that of intensive arsenotherapy, it is probable that the 71 patients in this series who are progressing satisfactorily after twelve months of observation will continue to do so.

The beneficial effect of the treatment on abnormal cerebrospinal fluid is shown in table 6. The only abnormal fluids among the 89 reexamined were found in 3 patients who developed a serologic or clinical relapse in the fourth month of observation. Furthermore, in 8 patients with abnormal fluids prior to treatment all were normal when examined six months or more after treatment.

The incidence of observed relapse, 1 in 53 patients with seronegative and seropositive primary syphilis, and 7 in 43 patients with secondary syphilis, suggests that the treatment was adequate for primary syphilis but inadequate for secondary syphilis. Experiences with smaller doses of penicillin⁵ and with intensive arsenotherapy⁴ have been similar in this respect; a higher failure rate was generally found in the secondary stage of syphilis than in the primary stage. It is possible that the results in secondary syphilis can be improved by increasing the size of the individual dose of penicillin, by lengthening the course of treatment or by both. Certain unknown factors, such as the *in vivo* sensitivity of *Treponema pallidum* and the exact nature of the increased resistance to treatment of secondary syphilis, make it impossible to predict which of these possibilities is most likely to increase the percentage of cures. It is known, for example, that the height of the blood level can be doubled by doubling the size of the individual dose;⁶ however, this may be of no great advantage since doubling the blood level increases the duration of penicillin in the blood by only about one third. On the other hand, it may be that a higher level will give greater penetration into relatively inaccessible areas. It is obvious that the answer can be obtained only empirically—by treating large numbers of patients with different regimens.⁶ As a departure the armed forces and certain civilian agencies are now following the exact treatment schedule used in the present study but are doubling the size of each individual dose; i. e., 2,400,000 units in sixty injections. It may be found necessary later to prolong the duration of therapy, although from the standpoint of time and expense this is naturally undesirable.

While the treatment of early syphilis by the schedule described is totally inapplicable to the outpatient clinic, it has two enormous virtues: it assures complete treatment of practically all, if not all, patients, a goal never even approached by the outpatient, arsenotherapeutic clinic, in which a high percentage of the patients became discouraged and stopped treatment before it was completed; and it does this without significant toxicity. Perhaps the desideratum of a practicable and successful ambulatory therapy for early syphilis will be met by the use of penicillin suspended in beeswax-peanut oil mixtures,⁷ by administering one or two intramuscular or subcutaneous⁸ injections daily for eight or ten consecutive days.

5. Rammelkamp, C. H., and Keefer, C. W.: The Absorption, Excretion, and Distribution of Penicillin, *J. Clin. Investigation* 22:425 (May) 1943.

6. A large scale investigation, with different time-dose plans, is now going on under the general auspices of the Committee on Medical Research of the Office of Scientific Research and Development and under the specific direction of the Subcommittee on Venereal Diseases, National Research Council. Moore, Mahoney, Schwartz, Sternberg and Wood.³

7. Romansky, M. J., and Rittman, G. E.: Penicillin: I. Prolonged Action in Beeswax-Peanut Oil Mixture; II. Single Injection Treatment of Gonorrhea, *Bull. U. S. Army M. Dept.*, October 1944, No. 81, p. 43.

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4. Leifer, W.; Chargin, L., and Hyman, H. T.: Massive Dose Arsenotherapy by Intravenous Drip Method, *J. A. M. A.* 117:1154 (Oct. 4) 1941.

SUMMARY

1. Each of 96 patients with early syphilis received sixty intramuscular injections of 20,000 units of penicillin in saline solution at three hour intervals, day and night, for seven and one-half days.

2. A Herxheimer reaction occurred in 88 (91.6 per cent) of the patients, and also some minor cutaneous, gastrointestinal and febrile reactions: in no case was it necessary to suspend or interrupt treatment because of reactions.

3. A relapse was observed in 8 (8.3 per cent) of the 96 patients, but 2 of these may have been reinfection. Relapse occurred in 1 (5.3 per cent) of 19 seronegative primary cases, in none of 34 seropositive primary cases and in 7 (16.3 per cent) of 43 secondary cases.

4. Of 72 patients followed from twelve to twenty months, 70 were seronegative and 1 had a doubtful Kahn test of the blood at the last visit; the other patient relapsed in the thirteenth month, and he may have had a reinfection.

5. The cerebrospinal fluid of 89 patients was reexamined six months or later following treatment; it was normal in 86, including 8 with abnormal pretreatment fluids: the 3 abnormal fluids were coincidental with a clinical or serologic relapse three to four months after treatment.

6. Although the results of this study must be considered preliminary—and the optimum treatment schedule, particularly for secondary syphilis, is still to be worked out—the findings suggest that the eight day treatment of early syphilis with 1,200,000 units of penicillin does cure early syphilis.

AN EFFECTIVE METHOD FOR THE CONTROL OF TRICHINOSIS IN THE UNITED STATES

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INCIDENCE OF TRICHINOSIS IN THE UNITED STATES

A large number of recent surveys of necropsy material in various localities in the United States has shown an average incidence of 16 per cent of trichinous infection.¹ When the methods of study were more thorough, an incidence as high as 36 per cent has been found.² The amazingly high frequency of parasitism with *Trichinella spiralis* revealed by these surveys caused Hall³ to emphasize that "the United States has the greatest problem of trichinosis of any country in the world."

It is now generally recognized that man acquires trichinosis primarily from eating trichinous pork and that the hog becomes infected primarily from eating scraps of uncooked trichinous pork present in garbage. The average incidence of trichinosis among hogs in the United States during the past fifty years has remained practically unchanged at a level of approximately 1.5 per cent. During 1944, 96,849,000 hogs were slaughtered in the United States and the total production of

pork was 12,893,000,000 pounds.⁴ It is estimated that this amount of pork would furnish about 30 billion individual servings, or approximately 200 servings per person in the United States. Since 1.5 per cent of the hogs are trichinous, 3 of these 200 servings of pork would contain trichinae. During 1944 most of the pork produced in this country was purchased by the armed forces and other governmental agencies for export. However, if it is assumed that in times of peace the annual per capita consumption of pork in the United States amounts to 200 servings, then each American consumes, on the average, 3 servings of trichinous pork each year; and since the average length of life of Americans is now over 64 years,⁵ there will be consumed for each American during his lifetime nearly 200 meals of pork containing trichinae. If the ingested trichinae are nonviable or have been killed by proper cooking or other method of processing, no infection will result. But it must be remembered that it requires the ingestion of viable trichinae in raw, undercooked or inadequately processed pork from only one meal to produce infection.

MORBIDITY AND MORTALITY FROM TRICHINOSIS

While it is true that in the vast majority of instances of parasitism with trichinae the infection is subclinical, there is no doubt that many infections produce symptoms which are undiagnosed. Gastrointestinal symptoms often appear three to fourteen or more days after the ingestion of trichinous pork, but the cause of this enteritis is seldom diagnosed or even suspected unless the patient becomes so ill as to require hospitalization or the disease occurs simultaneously in a number of persons. Considering the large chance for most people in the United States of eating pork containing viable trichinae at least once during their lifetime, it is not surprising that at least 16 per cent of Americans are found at autopsy to have been infected with trichinae. The morbidity rate in the United States is not definitely known, but the mortality rate in cases of clinically recognized trichinosis is 5 to 6 per cent.

TRICHINOSIS UNCONTROLLED AT PRESENT

The United States is in much the same situation today as regards the control of trichinosis as it was thirty or more years ago with regard to the question of pasteurization of milk. Despite the opposition at that time to the general adoption of pasteurization, the introduction of this method ushered in a new era in dairy sanitation. While there is considerable expense connected with pasteurization of milk, particularly for equipment, buildings and personnel, no one will now deny that the expense incident to effective pasteurization is worth while and even necessary for the protection of human health. And the public gladly assumes this extra expense in order to be assured of milk that is safe for human consumption. Prior to the general acceptance of pasteurization, many people were loath to drink milk, which they knew was often filthy; but today, when nearly all milk is pasteurized and produced under more sanitary conditions, the prejudice against drinking milk has practically disappeared. The dairy industry has profited vastly from the many advantages that it has gained as a result of the adoption of pasteurization of milk.

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3. Hall, M. C.: Studies on Trichinosis: The Past and Present Status of Trichinosis in the United States and the Indicated Control Measures, Pub. Health Rep. 53: 1472-1486, 1938.

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On the other hand, during the past fifty years very little progress has been made in the control of trichinosis in the United States. Approximately 70 per cent of American pork is prepared in plants which are under governmental inspection and carries the stamp "U. S. inspected and passed." This label on nonprocessed pork does not indicate that the meat is free from living

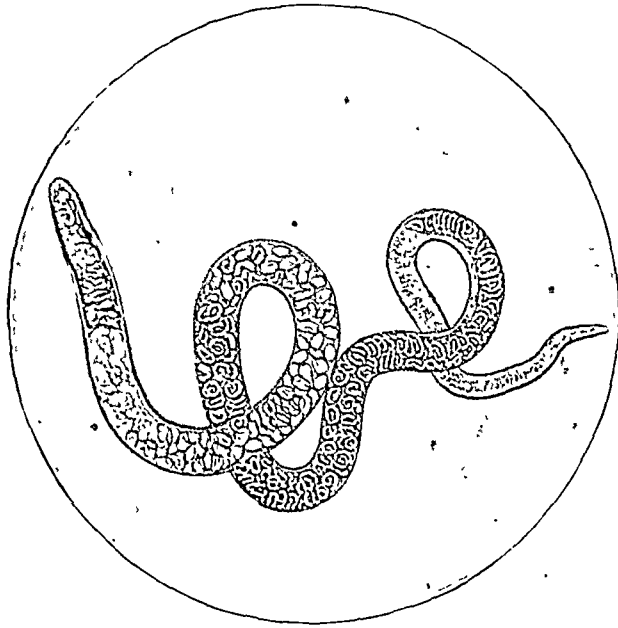


Fig. 1.—Adult gravid female trichina recovered from intestinal lumen of white rat six days after ingestion of trichinous meat. The female worm gives birth to from 1,000 to 1,500 trichina larvae. Slightly reduced from a photomicrograph with a magnification of 100 diameters.

trichinae. Meat-packing plants which are under governmental inspection are required to observe federal regulations for the processing of pork products of a kind ordinarily eaten without cooking, and such processed products may be expected to be free from viable trichinae. Other nonprocessed pork prepared in plants under federal inspection, and all pork prepared in plants not under federal inspection, may contain viable trichinae and may cause illness or death if consumed after inadequate cooking. The danger of contracting trichinosis from eating sausages containing pork is particularly great, since sausages are frequently eaten raw or insufficiently cooked.

Since only about 70 per cent of the pork is produced in plants under federal inspection and since in such plants it is only the processed products that may be expected to be free from viable trichinae, the larger part of the total American pork supply which reaches the kitchen is open to the danger of carrying live parasites. The consumer assumes that the pork that he eats is a safe food, but he is seldom aware that it is actually free from living trichinae. Furthermore, the consumer may knowingly or unknowingly eat pork that has been placed in certain meat products, such as frankfurters, hamburger, sausages, meat loaf and chop suey, which he purchases either in the butcher shop or the delicatessen store or in the restaurant, and if such meat products have been insufficiently cooked or inadequately processed he may run the risk of acquiring trichinosis. The question may properly be asked, "Why should the consumer of pork constantly be exposed to the danger to health and life from trichinosis?" Surely the public will be grateful for any method which will adequately safeguard its health in the consumption of this important

food, and it will gladly assume the small extra expense incurred in the production of a safe supply of pork.

In recent years numerous legal suits have been instituted because of illness or death resulting from trichinosis. The claims have been based, in most of these instances, on a breach of implied warranty of the fitness of the pork as a food for human consumption and in many cases on negligence in the methods of production of pork as a food. Most of the claims have been brought against the packer, and in the majority of suits the judgment has been rendered in favor of the plaintiff. In a number of instances the awards granted have been remarkably high.

The adoption of a method which will produce a supply of pork free from viable trichinae will remove the objection which many people now have to eating pork because of the danger of contracting trichinosis. After a method of control of trichinosis has been adopted, it is probable that other measures will be instituted for the improvement of sanitary conditions in the swine industry, so that the public will be less inclined to associate conditions of filth with the raising of hogs. From a purely business point of view, the swine raisers and the pork packers will surely benefit greatly from utilizing a satisfactory means for the control of trichinosis.

It is logical and inevitable that sooner or later a method will be adopted for producing a supply of pork that is free from the danger of causing trichinosis in man. The prevention of trichinosis in man consists essentially in the elimination of the disease from hogs. The high average incidence of approximately 1.5 per cent of trichinosis in hogs in the United States, which has remained unchanged during the past fifty years, stands in sharp contrast to an incidence of trichinous infection in hogs in Canada of 0.57 per cent, in Poland

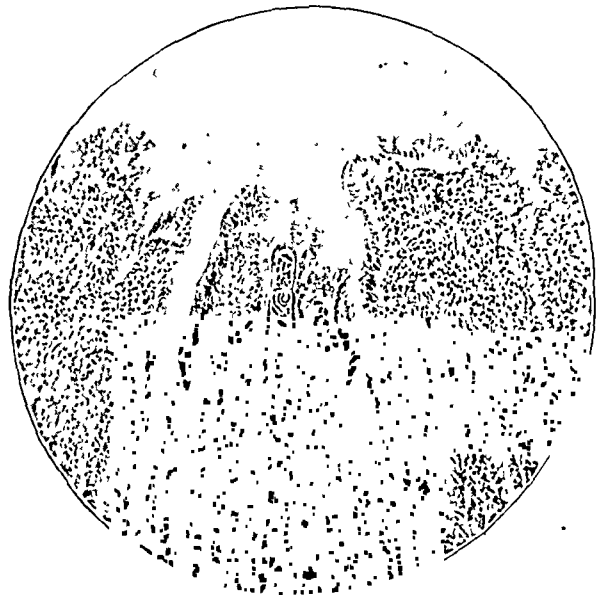


Fig. 2.—Portions of gravid female adult trichina embedded in mucosa of duodenum of white rat six days after ingestion of trichinous meat. The mother worm is depositing her larvae at this point, from which they will eventually reach the skeletal muscle and encyst in it. Reduced from a photomicrograph with a magnification of 100 diameters.

of 0.05 per cent, in Germany of 0.001 per cent and in Copenhagen of only 0.00075 per cent. Official statistics are available covering the microscopic examination for trichinae in 8,000,000 hogs in the United States from 1898 to 1906 and in 6,000,000 hogs in Copenhagen from 1910 to 1935. These statistics show that in the United

States over 14,000 hogs per million were found trichinous, compared to only 7 hogs per million in Copenhagen.

AVAILABLE CONTROL MEASURES

Measures which have been advocated in the control of trichinosis include (1) destruction of rats, (2) elimination of garbage and of offal from the feed of hogs,



Fig. 3.—Encysting larvae in human muscle. Infection about 7 weeks of age. Note intense inflammatory reaction. Reduced from a photomicrograph with a magnification of 75 diameters.

(3) cooking of garbage which is to be fed to hogs, (4) microscopic inspection of pork, (5) proper processing of pork products which are customarily eaten without cooking and (6) education of the public in the necessity of adequate cooking of pork and pork products which are customarily cooked before being eaten. Skin-testing of hogs with a trichina antigen prior to slaughter, as a possible method of control,⁶ has been found to be unreliable in detecting animals which harbor trichinae.

While rats are frequently infected with trichinae, it is generally agreed that it is a very rare occurrence for a pig to eat a rat and therefore for a pig to acquire trichinosis from a rat. It is, of course, highly desirable from the point of view of general sanitation that methods be instituted for the extermination of rats, but it must be admitted that the rat plays a minor role in the spread of trichinosis to the pig and thence to man.

Education of the public through the medium of the newspapers, by use of posters displayed in butcher shops and particularly through instruction in the public schools should not be neglected, but such education in itself will not eradicate trichinosis in man or pig.

There are three principal methods of control of trichinosis: (a) microscopic inspection of pork, (b) cooking of all garbage fed to hogs and (c) processing of all pork prior to its ultimate sale.

MICROSCOPIC INSPECTION

The microscopic inspection of pork has been practiced in a number of countries and has proved to be quite effective. This is the method which has been

used most extensively in various parts of Germany since 1865. During the years 1883 to 1924 in the city of Berlin 4,337 hogs were found to be trichinous, and during these forty-one years no case of human trichinosis was reported in that city from eating pork that passed inspection. In other parts of Germany trichinosis from eating raw pork which had passed microscopic inspection has been reported sporadically, and yet there can be no question but that in Germany the systematic enforcement of this method has almost eradicated the disease. Other countries which require microscopic inspection of pork for trichinae include Denmark, Sweden, France, Argentina and Chile. The United States also had compulsory microscopic inspection of pork during the period from 1891 to 1906, but only for pork that was intended for export. This inspection was authorized by an act of Congress and was necessitated by the virtual exclusion of American pork from the European market, an embargo which was highlighted by specific decrees issued by Bismarck in 1880 and 1883 which prohibited the importation of American pork into Germany. Despite the method of microscopic inspection which was instituted in the United States in 1891, Germany in 1892 required the reinspection of American pork and in 1898 refused altogether to accept the certification of inspection of the United States Department of Agriculture. Consequently in 1906 Congress adopted a new measure which no longer required that pork be inspected microscopically.

Microscopic inspection has therefore never been applied in the United States to pork consumed in this country. A theoretical objection has been raised that this method is not practical, since it is too time consuming for present high-speed American requirements. Microscopic inspection has recently been introduced into Chile, where the use of the phototrichinoscope has been found to expedite the examination. By this method a moving trichinoscope or compressor containing several specimens of meat from each hog is projected onto a screen, where it is scrutinized by the inspector for the possible presence of trichinae. If the method of microscopic inspection should be instituted in the United States for the control of trichinosis, it is safe to assume that suitable devices for a sufficiently rapid examination of the meat would soon be developed.

The method has also been criticized as being too expensive. It is true that the expense of the microscopic inspection would undoubtedly be greater than either of the other methods of control under consideration, since it would require, in addition to buildings and apparatus, a vast corps of inspectors. The relatively greater cost of microscopic inspection, therefore, constitutes a disadvantage of this method. But even more important than the cost of the method is the relative degree of its effectiveness. In addition to the relatively greater cost, there are two other serious objections to microscopic inspection which arise from defects inherent in the method. Specimens of pork containing trichinae may pass inspection undetected. This is particularly possible in meat containing young unencysted larvae or larvae enclosed within noncalcified cysts, since the larvae and the uncalcified cysts both are more or less transparent and therefore often difficult to recognize. The age of the vast majority of hogs which now come to slaughter in this country is less than a year, and at this age calcification of the trichina cysts is almost never present. Another valid objection lies in the large possibility that the particular specimen of

6. Schwartz, B.: Trichinosis in Swine and Its Relationship to Public Health, Ann. Rep. Smithsonian Inst. (1939), 1940, pp. 413-435.

meat examined may be free from trichinae, while the larvae are abundantly present in other portions of unexamined meat from the same animal. Thornbury⁷ investigated hogs for the presence of trichinae in the diaphragm and muscles of the neck and loin. Among 1,043 hogs that were found trichinous the diaphragm was involved most often and most heavily, and yet no trichinae were found in the diaphragm in 24 per cent of these trichinous hogs. A fourth objection to the use of microscopic inspection is that the public may gain a false sense of security in assuming that pork which has passed inspection is safe for consumption in the raw state.

FEEDING OF COOKED GARBAGE TO HOGS

The second plan of control of trichinosis, that of cooking garbage which is to be fed to hogs, is one which has been adopted in Canada, England, the Hawaiian Islands and the states of Kentucky, Oregon and New York. This method has been repeatedly advocated by Hall³ and by Wright.⁸ The cost of instituting the method and providing apparatus for the cooking of garbage which is to be fed to hogs need not concern us. The points of fundamental importance are the effectiveness and the practicability of such a plan in the control of trichinosis. If all garbage was to be cooked prior to feeding it to hogs, the incidence of trichinosis among hogs so fed would be greatly decreased. However, it must be remembered that even among grain-fed hogs approximately 0.9 per cent of the animals are trichinous⁹ and that the method under discussion would not eliminate the infection in grain-fed hogs. The method of feeding cooked garbage to hogs could undoubtedly be enforced in the case of large swine raisers, but it appears practically impossible to enforce the law in the case of small swine raisers. This fact alone makes the method, from a practical point of view, unworkable. In the states of New York, Oregon and Kentucky difficulties of enforcement have rendered the law ineffective. Furthermore, in the state of Oregon a person is permitted to feed swine garbage which has accumulated from his own household. In Chile, where the principal method of control is microscopic inspection, the law wisely forbids the feeding of any garbage, cooked or uncooked, to hogs.

The successful operation of this method of control would require a huge corps of sanitary inspectors and a tremendous job of policing. The method is regarded as less practical than microscopic inspection.

PROCESSING OF PORK

The third possible method of control is that of processing pork and pork products. By processing is meant the treatment by methods of freezing, cooking, smoking, curing or other means, according to federal specifications, which will render nonviable any trichinae present in meat. It is proposed that the federal government enact legislation which will require all pork that is intended for interstate shipment to be so processed as to render it free from living trichinae; furthermore, that all pork, pork products or meat preparations containing pork be required to bear the following label: "This product conforms to U. S. specifications for

processing of pork." Likewise it is proposed that all city, county or state health authorities adopt similar regulations governing the preparation of all pork which is intended for local sale within the city, county or state, and that all such pork shall be labeled "This product conforms to (local) health regulations for processing of pork."

Trichinae are killed at a temperature of 55 C., but the federal regulations require that in killing trichinae by heat all parts of the meat shall be raised to a temperature of 58.33 C. (137 F.). In the case of fresh pork, processing consists principally in the methods of freezing. Trichinous meat in sections of 6 inches or less can be rendered noninfective by refrigeration¹⁰ at a temperature of 5 F. for twenty days, minus 10 F. for ten days or minus 20 F. for six days. It has also been found¹¹ that raw pork in commercial quantities may be rendered free of infective trichinae by lowering its temperature to minus 35 C. (minus 31 F.) or by freezing¹² at minus 17.8 C. (0 F.) for seventy-two hours. In ground meat, encysted trichinae are killed within a few minutes at a temperature of minus 17.8 C. (0 F.). In most deep-freeze cabinets, such as those used in the home, temperatures varying from 0 to 5 F. are usually maintained. The main costs connected with this method of control of trichinosis are the costs of apparatus, such as refrigerating units, and of storage space. These expenses are initial ones, and similar initial expenses would be found necessary in any other method. The operation or maintenance of the method, however, would involve relatively little personnel as compared with microscopic inspection, and the method of processing therefore would be much cheaper. In the last analysis the cost of this method would not be great and would, of course, be borne by the consumer. The consumer would, in fact, be glad to assume this extra cost if he could have the assurance that he was receiving meat that was free from living trichinae.

The method of processing pork would largely eliminate trichinosis from hogs very quickly and would at the same time check the spread of trichinosis to man. If in any one year all pork should be processed, all trichinous pork would contain only nonviable trichinae, and any scraps of such pork which might reach the new crop of hogs would be incapable of producing trichinosis in them. Butcher hogs that come to market average from 9 to 10 months of age, sows average from 20 to 24 months, and the overall average age of hogs at the time of slaughter is about 11 months.⁴ It is logical, therefore, to expect a rapid decrease in the incidence of trichinosis in hogs within a very few years after the general introduction of such a method of control. The hog raiser and the packer would benefit greatly from the advantages which would accrue to them in being enabled to supply to the public pork which was free from its chief stigma, the danger of trichinosis.

The initiative for such a method of control appears, from past indications, to rest primarily on physicians and public health authorities. The time will surely come when the public will insist that the pork which it eats, no less than the milk which it drinks, is safe for human consumption.

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Clinical Notes, Suggestions and New Instruments

ACCIDENTAL INTRA-ARTERIAL INJECTION OF OXOPHENARSINE HYDROCHLORIDE (MAPHARSEN)

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No reference to the effects of the intra-arterial injection of oxophenarsine hydrochloride (mapharsen) was found in the textbooks and literature available. Stokes¹ implied that arsphenamine may be safely injected intra-arterially but did not mention that there may be reactions from the other arsenicals. The painful reaction described here is believed to have followed such an accidental injection.

A brown Panamanian aged 22 was under treatment for early latent syphilis at the Venereal Disease Clinic of Gorgas Hospital, Ancon, C. Z. Both the Wassermann and Kahn reactions of the blood serum were strongly positive, but there was no other clinical or laboratory evidence of disease. The reaction followed his twelfth injection of oxophenarsine hydrochloride.

On the regular weekly clinic visit, a routine check-up serologic test and 0.05 Gm. of oxophenarsine hydrochloride were ordered. The nurse injector, using a 22 gage needle and a 10 cc. syringe, withdrew a 4 cc. blood specimen from a vessel in the left antecubital fossa. Releasing the tourniquet, but leaving the needle in place, she detached the syringe containing the blood sample, attached a second syringe containing the 0.05 Gm. of oxophenarsine hydrochloride in 8.6 cc. of distilled water and injected the drug in approximately ten seconds.

Before completion of the injection, the patient complained of pain in the hand and lower part of the forearm. Within a few seconds after the withdrawal of the needle the pain had increased to such an extent that he was groaning, his face became pale and he seemed about to faint. It was necessary to assist him to a bed in the clinic. Morphine sulfate 0.015 Gm. was given for the pain about five minutes after the injection. One half hour later the patient was still moaning with pain, and he was transferred to a hospital ward, where another 0.015 Gm. of morphine was given.

When seen by one of us (J. L. W.) about one minute after the injection, the skin of the forearm and hand was bluish. This dusky color faded in a few minutes and the skin of the hand became slightly pinker than normal. The pain was described as a steady boring or aching pain and not as burning or cramplike. It was generalized in the forearm and hand but was most severe in the thenar and hypothenar eminences and in the finger tips. These areas were slightly tender to touch. Motion and tactile sensation were unimpaired. Local applications of heat or cold did not relieve the pain.

Two hours later the pain was considerably less. The skin color and pulse were normal, but the forearm and hand were slightly swollen as compared to the opposite extremity. Five hours after the injection the oral temperature was 99.2 F. and slight swelling was still present but there were no other changes. The following day the patient had no complaints and was discharged from the hospital. He has been followed in the clinic for one year without developing sequelae and has received subsequent injections of oxophenarsine hydrochloride without difficulty.

We believe that the reaction was due to an intra-arterial injection of oxophenarsine hydrochloride for the following reasons:

1. The color of the blood specimen drawn from the patient was a much brighter red (arterial) than the specimens drawn from other patients at about the same time. This difference was still noticeable when we examined the rack of blood specimens one and one half hours later.

2. The pain began immediately and occurred only distal to the site of the injection. There was no pain in the upper arm as with venous spasm. There was no swelling or pain at the injection site suggesting an infiltration.

3. The pain was generalized in the forearm and hand and was not confined to an area corresponding to the distribution of a nerve.

4. On examination of the patient's antecubital fossa, a superficial pulsating vessel could be felt just beneath and parallel to the visible vein that the operator had intended to use.

The injector was relatively inexperienced, so that minor abnormalities in the injection procedure such as the resistance of the vessel wall, the ease with which the blood was withdrawn and the color of the blood may have been overlooked. The small size of the needle (22 gage) also tends to minimize the first two points. One possible explanation for the fact that blood did not spurt from the needle during the interval when the syringes were changed is that the bevel of the needle was in contact with the vessel wall.

In the two years that the clinic has been in operation, 60,000 intravenous arsenical injections have been given. During this time there has been one other similar but less severe reaction. Subsequent examination showed a superficial artery in the forearm of this patient also, but there was no other evidence to confirm the suspicion that the pain was due to an intra-arterial injection.

SUMMARY

A severely painful local reaction followed an injection of oxophenarsine hydrochloride. The pain lasted several hours and required morphine for relief. We believe it was due to an accidental intra-arterial injection because a blood specimen drawn just before the injection was bright red (arterial) blood, the pain was immediate and entirely distal to the point of injection and an anomalous superficial artery was found at the injection site. Except for the severe pain, there were no serious sequelae.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., Secretary.

PENICILLIN (See New and Nonofficial Remedies, 1945, p. 214).

The following additional dosage forms have been accepted:
MERCK & CO., INC., RAHWAY, N. J.

Penicillin Sodium: Vials containing 200,000 Oxford Units.

Penicillin Calcium: Vials containing 200,000 Oxford Units.

SULFADIAZINE (See New and Nonofficial Remedies, 1945, p. 185).

The following dosage form has been accepted:

VOGEL LABORATORIES, MOHEGAN LAKE, N. Y.

Emulsion Sulfadiazine 5% Sterilized: 50 cc. and 200 cc. bottles. A 5 per cent suspension of sulfadiazine in an emulsion of beeswax, liquid petrolatum, triethanolamine and water.

DIPHENYLHYDANTOIN SODIUM (See New and Nonofficial Remedies, 1945, p. 528).

The following dosage form has been accepted:

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK
Capsules Diphenylhydantoin Sodium: 0.03 Gm. and 0.1 Gm.

THEOPHYLLINE ETHYLENEDIAMINE (See New and Nonofficial Remedies, 1945, p. 388).

The following additional dosage form has been accepted:

ERNST BISCHOFF COMPANY, INC., IVORYTON, CONN.

Solution Aminophylline: Ampuls 0.24 Gm. in 10 cc. and 0.48 Gm. in 2 cc.

From the Branch Medical Clinic, Gorgas Hospital, Ancon, Canal Zone.
1. Stokes, John H.; Beerman, Herman, and Ingraham, Norman R., Jr.: *Modern Clinical Syphilology*, ed. 3, Philadelphia, W. B. Saunders Company, 1944, p. 401.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report.

HOWARD A. CARTER, Secretary.

SAFETY OF MODERN ALTERNATING POSITIVE AND NEGATIVE PRES- SURE RESUSCITATORS

HENRY SCHWERMA, P.H.D.

AND

A. C. IVY, P.H.D., M.D.

This investigation was undertaken primarily to ascertain whether one of the currently used positive and negative pressure resuscitators (so-called "suck and blow" type) when used for one to three hours will cause a significant amount of damage to the lung. The experimental conditions were such that we had the opportunity of observing whether the use of the resuscitator interfered with the return of a low blood pressure to normal as compared to intermittent positive pressure devices.

The subject requires investigation because resuscitators of the "suck and blow" type are being quite widely used in the United States¹ and because the wisdom of their use, particularly by laymen, has been questioned.² It is appropriate to examine the literature to ascertain the evidence on which the questionable use of the "suck and blow" resuscitator is based.

ANALYSIS OF THE LITERATURE

Henderson and Turner³ state that "the deaths resulting from suck and blow respiration applied to dogs in the experiments of Henderson and Haggard,⁴ of Henderson⁵ and of Coryllos⁶ deserve serious consideration." The reference to Henderson and Haggard⁴ refers to four experiments in which it was observed that excessive artificial respiration for a prolonged period decreases blood pressure, washes out carbon dioxide and causes apnea vera. The reference to Henderson⁵ refers to a number of experiments in which excessive artificial respiration for twenty-five to thirty minutes is followed by apnea so prolonged that the heart fails after seven or eight minutes for the lack of oxygen. However, in producing the hyperventilation the respiratory rate was 60 to 120 cycles per minute (the minute volume is not provided) with an alternating positive and negative pressure of 30 cm. of water. The reference to Coryllos⁶ refers to experiments on 7 dogs which were under amytal anesthesia and received artificial respiration for one to eight hours. Four of the 7 dogs died from five to twelve hours after the conclusion of the experiment and "at autopsy relatively slight pulmonary and other lesions were found, which could not explain death." "Suspecting chilling as a possible cause," the other dogs were kept warm, the gas inhaled was humidified and no deaths

occurred. Henderson⁷ in 1916 was inclined to doubt "whether an active withdrawal of air with a pump of limited stroke has any very serious objections" and referred to his hyperventilation experiments⁸ in which he used "two pumps arranged in a manner similar to the 'lungmotor' and worked quite violently" and which caused "no particular ill effects on the lungs." In the same paper he recommended that the "Pulmotor Model B" be equipped with blow off valves limiting the positive pressure to 15 cm. of water pressure and the negative pressure to 10 cm. Meltzer,⁹ who studied the old "Pulmotor," found that it would frequently turn off the supply of air when the pressure in the trachea was only 4 cm. of water. As a result the lungs were inadequately ventilated and decreased in volume with the chest open. He believed that the suction would favor collapse of the bronchioles and hence only the dead air space would be ventilated. He pointed out that Henderson's favorable view of "suck and blow" was due to the fact that the pumps he used were directly connected to the trachea, which would obviate the resistance in the nasopharynx. Meltzer⁹ used a device with bellows for intermittent positive pharyngeal insufflation with a tube in the stomach to release any gas entering it. In 1934 Henderson,¹⁰ in discussing intratracheal insufflation with intermittent positive pressure, recommended a maximum pressure of 40 mm. of mercury for the adult and 25 mm. for the infant. In discussing the E and J Resuscitator he stated that "pressure and suction require intubation of the trachea, an operation that properly and legally can be performed only by physicians. The administration of pressure and suction with a mask sometimes works; but it is liable to fail when most needed. In the hands of laymen, such apparatus cannot be made free from serious danger of injury to the lungs." Henderson and Turner³ in 1941 experimented with the E and J Resuscitator and gassed 6 dogs with carbon monoxide to the stage of coma, in which stage they were either convulsive or limp. The three treated with the E and J Resuscitator and 5 per cent carbogen (presumably 5 per cent carbon dioxide and 95 per cent oxygen; they do not state) died and the 3 treated with manual artificial respiration and carbogen survived. The lungs of the animals treated in these and other experiments were not examined. They found that, "in brief, a resuscitator is merely an inhalator which tends to impede natural breathing by sucking and blowing." They wrote however that, "in order to administer carbon dioxide efficiently, the pulmotor, E and J Resuscitator and similar devices should be modified to eliminate the suction phase, decrease the pressure of the blowing phase and greatly increase its volume. They would then become efficient resuscitation apparatus, which at present they are not." But we have been unable to find any reason given or evidence submitted by Henderson indicating why suction is undesirable.

We have been unable to find evidence in the publications of Henderson and his associates which indicates that the lung is damaged by alternating positive and negative pressure. The alternating positive and negative pressure of 30 cm. of water (22 mm. of mercury) used in his hyperventilation experiments may have been conducive to the fall in blood

From the Department of Physiology, Northwestern University Medical School, Chicago.

1. Ross, B. D.: A Survey of Methods for Artificial Respiration, *J. A. M. A.* **122**: 660 (July 3) 1943.

2. Drinker, C. K.: Restoration of Breathing in Emergencies and Maintenance of Respiration in Nonbreathing Patients, *J. Oklahoma M. A.* **37**: 285 (July) 1944. Henderson and Turner.³

3. Henderson, Yandell, and Turner, J. M.: Artificial Respiration and Inhalation, *J. A. M. A.* **116**: 1508 (April 5) 1941.

4. Henderson, Yandell, and Haggard, H. W.: *J. Biol. Chem.* **33**: 355, 1918.

5. Henderson, Yandell: *Am. J. Physiol.* **25**: 310, 1910.

6. Coryllos, P. N.: *Surg., Gynec. & Obst.* **66**: 698, 1938.

7. Henderson, Yandell: Resuscitation Apparatus, *J. A. M. A.* **67**: 1 (July 1) 1916.

8. Henderson and Haggard.⁴ Henderson,⁵

9. Meltzer, S. J.: *M. Rec.* **92**: 1, 1917.

10. Henderson, Yandell: Resuscitation, *J. A. M. A.* **103**: 750 (Sept. 8), 834 (Sept. 15), 1934.

pressure and fatal apnea that he observed¹¹ or the fall in blood pressure may have been due to anesthesia or to both. SeEVERS and his associates¹² observed that hyperventilation (P_H increase in plasma 0.31 unit) decreased the systolic pressure 10 mm. of mercury before and 25 mm. of mercury during anesthesia. Apnea occurred for five to nine minutes but was followed by a return of normal respiration and blood pressure. This evidence indicates that acapnia, though undesirable, is not as serious as the experiments of Henderson and Haggard indicate. However, it does constitute one of the arguments in favor of the use of carbogen in the treatment of carbon monoxide anoxemia, in which there is no pronounced accumulation of carbon dioxide in the body as occurs in obstructive asphyxia. As Henderson and Turner have shown, artificial respiration of the suck and blow type interferes with the rhythm of natural breathing. But any type of artificial respiration which is not synchronized with natural breathing will do the same. The evidence of Henderson and Turner regarding the comparison of the effectiveness of manual with mechanical artificial respiration, in which only 6 gassed dogs were used, is certainly inadequate. The results of such a comparison made by us on larger groups of dogs will be submitted in our subsequent report.

THE PRESSURE REQUIRED TO RUPTURE ALVEOLI

The amount of pressure required to rupture alveoli has been studied by several groups of investigators. Ewald and Kobert,¹³ using rabbits, found that air in the lungs under a pressure of 40 mm. of mercury (54.4 cm. of water) caused rupture of the alveoli and pneumoperitoneum. In 1931 Joannides and Tsoulos,¹⁴ using dogs, found that a continuous intrapulmonic pressure of 60 mm. would cause interstitial emphysema and that higher pressure would cause pneumothorax, pneumoperitoneum and air embolism. Polak and Adams¹⁵ placed a gas trap in the carotid artery of dogs and found that air appeared in the trap when the intrapulmonic pressure was 80 mm. of mercury (109 cm. of water) for ten second periods of inflation; it did not appear when the pressure was 60 mm. of mercury; 100 mm. of mercury caused extensive interstitial mediastinal and subcutaneous emphysema. Burkhardt and Ivy¹⁶ found that the presence of 100 mm. of mercury pressure of air in the trachea for two seconds will cause rupture of the pleura in some dogs as well as emphysema. Macklin¹⁷ has described anatomically the passage of air bubbles from the alveoli along the sheaths of the pulmonary vessels to the mediastinum when the lungs are overinflated. Coryllos,⁶ studying the isolated lung of dogs, observed the leakage of air when the continuous intrapulmonic pressure was 52 mm. of mercury.

More recently studies have been performed the results of which reveal the occurrence of interstitial and mediastinal emphysema with lower intrapulmonic pressures. These investigators were interested in the possible dangers of intratracheal anesthesia under the conditions

of thoracic surgery. Marcotte and his associates,¹⁸ using 11 dogs, introduced air as a continuous stream into the trachea through a catheter with an outflow. The intrabronchial pressure was maintained at pressures ranging from 16 to 110 mm. of mercury for eighteen to seventy-five minutes. A sustained pressure of 24 mm. of mercury (32.6 cm. of water) produced interstitial and mediastinal emphysema, but such a lesion was not obtained with 18 mm. of mercury until the chest was opened. Cats were more susceptible, developing emphysema with pressures of 16 to 20 mm. of mercury. Rasmussen and Adams¹⁹ conducted acute and chronic experiments on dogs to ascertain the effects of an intermittent type of positive pressure on the lungs. The on-period of the pressure in each cycle was three times longer than the off-period in order to simulate the longer expiratory pressure period present during an attack of asthma. The lungs were inflated twenty-eight times per minute with a pressure at the carina ranging from 30 to 35 mm. of mercury. The acute experiments varied from thirty-five to seventy-five minutes in duration. In the chronic experiments the lungs were inflated, with the animal under morphine anesthesia, for fifteen minutes twice a week for from one week to eleven months. Microscopically all the dogs had slight to pronounced interstitial emphysema. Two, or 22 per cent of the 9 dogs, died with mediastinal emphysema, air embolism and subpleural hemorrhage during the period of overinflation. During overinflation the arterial pressure was much reduced in the acute and cyanosis occurred in the chronic experiments.

It should be emphasized that in the foregoing experiments the pressures were intrabronchial and not oronasal and that they were relatively high and more or less continuous. Orth and his associates²⁰ found that the fall of pressure from a mask to the carina was from +34 mm. of mercury at the mask to +28 mm. of mercury at the carina when he used a resuscitator which gave the largest positive pressure at the mask. It would appear from the observations of Rasmussen and Adams and of Marcotte and his associates on the dog that the positive pressure at the mask should probably not exceed 20 mm. of mercury (27 cm. of water). If the device has a blow off valve set at a maximum of 20 mm. of mercury, any lack of synchronization with natural breathing when it appears unexpectedly will safeguard the lungs from undue pressure. It is assumed that, when natural breathing is adequate, artificial respiration will be stopped and the inhalator turned on.

INTRABRONCHIAL PRESSURE IN MAN UNDER ORDINARY CONDITIONS

Under ordinary breathing the intrabronchial pressure varies under +1 to +5 mm. of mercury to -1 to -3 mm. of mercury. During speaking with the ordinary pitch and loudness, the intratracheal pressure ranges from 10 mm. of mercury to 18 mm. of mercury. During shouting it may be as large as 70 mm. of mercury. For a second or more during coughing, the intratracheal pressure may be as high as 80 to 100 mm. of mercury.²¹ In the dog, during expiration with the

11. Hill, L., and Flack, M.: *J. Physiol.* 37:86, 1908.
12. SeEVERS, M. H.; Stormont, R. T.; Hathway, H. R., and Waters, R. M.: *Respiratory Alkalosis During Anesthesia*, *J. A. M. A.* 113:2131 (Dec. 9) 1939.
13. Ewald, J. R., and Kobert, R.: *Arch. f. d. ges. Physiol.* 31:160, 1883.
14. Joannides, Minas, and Tsoulos, G. D.: *The Etiology of Interstitial and Mediastinal Emphysema*, *Arch. Surg.* 21:333 (Aug.) 1930.
15. Polak, B., and Adams, H.: *U. S. Nat. M. Bull.* 30:165, 1932.
16. Burkhardt, W., and Ivy, A. C.: *Manuscript in preparation*.
17. Macklin, C. C.: *Pneumothorax with Massive Collapse from Experimental Overinflation of Lung Substance*, *Canad. M. A. J.* 36:414 (April) 1937; *Transport of Air Along Sheaths of Pulmonic Blood Vessels from Alveoli to Mediastinum*, *Arch. Int. Med.* 64:913 (Nov.) 1939.

18. Marcotte, R. J.; Phillips, F. J.; Adams, W. E., and Livingstone, H.: *J. Thoracic Surg.* 9:346 (Feb.) 1940.
19. Rasmussen, R. A., and Adams, W. E.: *Experimental Production of Emphysema*, *Arch. Int. Med.* 70:379 (Sept.) 1942.
20. Orth, O. S.; Wilhelm, R. L., and Waters, R. M.: *J. Thoracic Surg.* 14:220, 1945.
21. Neergard, K., and Wirtz, K.: *Ztschr. f. klin. Med.* 105:31, 1927. Emerson, C. P.: *Johns Hopkins Hosp. Rep.* 9:1, 1903. Rohrer, F.: *Schweiz. med. Wchnschr.* 2:765, 1921. Coryllos, P. N.: *Am. J. M. Sc.* 194:523, 1937.

trachea obstructed, the pressure may be as high as +76 mm. of mercury and during inspiration as low as -35 mm. of mercury. This must be taken into account in interpreting the presence of interstitial and mediastinal emphysema and air embolism in obstructive asphyxia.

LACK OF EVIDENCE OF LUNG INJURY USING THE POSITIVE-NEGATIVE PRESSURE RESUSCITATOR

Relatively little work has been published in which the effect on the lungs of a resuscitator of the suck and blow type has been investigated.

Rost²² in 1932 used a suck and blow type of artificial respiration in which the peak positive and negative pressure was ± 14 mm. of mercury. The animal was anesthetized and curarized. No deleterious effects on the lung or blood pressure were observed in acute or recovery experiments. He observed no untoward effects when the technic was applied to the human being. The lungs were not examined for emphysema microscopically. Coryllos⁶ used the E and J Resuscitator, which provides a maximum positive pressure of 14 mm. of mercury and a negative of 9 mm. of mercury. He obtained favorable results with its use in human and canine tests. Of the 4 dogs which died, he reports only one microscopic study of the lungs and does not mention emphysema. In his other tests, if emphysema occurred it was not significant. Birnbaum and Thompson²³ in a series of studies summarized by Thompson²⁴ in 1944 used the Emerson Resuscitator, which is a suck and blow type (+14 mm. of mercury and -9 mm. of mercury). They chiefly studied resuscitation from obstructive asphyxia and anoxia due to the inhalation of inert gases, such as pure nitrogen. They resuscitated 72 of 106 animals. They did not study the lungs microscopically, but it was probably not necessary because they used the resuscitator only a few minutes. Steinberg and Dietz²⁵ used the McKesson resuscitator, which inflates and deflates the lungs by a fixed volume, on seven dogs for from one to eight hours. They do not provide the peak positive and negative pressures used. The microscopic study of the lungs in 2 of the animals showed no abnormalities except some hyperemia. More recently Drinker² has stated "I have never been afraid that blow and suck machines as safeguarded today would do harm by rupturing the lungs. Their failure is through lack of air delivery." In 1923 he and his associates²⁶ reported experiments on cats in which a lungmotor set at +20 mm. of mercury and -4 mm. of mercury did not embarrass the dilated heart in carbon monoxide poisoning and produced no evidence of rupture of the lung. They say that "the possibility that positive ventilation might rupture a diseased lung can never be dispelled by animal experimentation." In his latest paper Drinker² reports an experiment on a dog under anesthesia and curare in which a suck and blow apparatus was connected to a tracheal cannula. The positive pressure was 10 cm. of water and the negative 8 cm.; air was used. As a consequence he observed during a period of four hours a gradual decrease in lung volume. It is stated that "the loss is due to gradual atelectasis and

exudation in dependent parts of the lungs where expansion is most difficult. It occurs more rapidly in a machine which sucks during expiration than in one in which expiration is passive, as in normal breathing." This would seem to be reasonable under the condition of the experiment, but more evidence is needed to establish the latter statement. It may not apply when 5 or 7 per cent carbogen is used but may when oxygen is used; or it may apply only if the minute volume of respiration is kept constant by a tight fitting tracheal cannula. He interprets his observations as arguing against the prolonged use of the suck and blow method, especially in the presence of water or exudate in the air passages.

Thus, our review of the literature has revealed no evidence showing that lung damage occurs in the dog when continuous insufflation yielding an intrabronchial pressure of 18 mm. of mercury or less is used or when the modern suck and blow resuscitators with a peak of positive and negative pressure of +14 mm. of mercury and -9 mm. of mercury is used. The evidence, however, is meager.

DO RESUSCITATORS PREDISPOSE TO PNEUMONIA?

Another point in connection with lung damage deserves consideration: One would like to know whether the methods used for resuscitation vary in regard to the predisposition to subsequent pulmonary disease. If one method predisposes more to atelectasis and pulmonary edema than another, this might predispose to pneumonia. Or, if a method causes the passage of more material from the upper respiratory tract into the lungs, this might predispose to pneumonia. The first possibility is suggested by the aforementioned experiment of Drinker.² The second possibility was studied by Drinker and his associates²⁶ in 1923. In these experiments they compared the extent to which material dripped into the trachea of anesthetized animals is carried into the lungs under natural breathing and artificial respiration. They concluded from the experiments that "apparently, if one utilizes an air blast which is sufficiently vigorous to get air into the alveoli in anything like normal amounts, he is in danger of carrying in material from the upper respiratory tract." Experiments with manual artificial respiration were not conducted. It would seem that the only way to obtain evidence on this problem would be to asphyxiate animals, resuscitate some by manual respiration and others by a positive pressure method, and ascertain the incidence of pneumonia in the two groups.

IS A NEGATIVE PHASE IN THE RESPIRATORY CYCLE OF RESUSCITATORS ADVANTAGEOUS?

Though we have been unable to find evidence showing that intermittent positive-negative intrapulmonic resuscitators damage the lungs or interfere with the circulation, the question arises What are the advantages of adding the negative phase to the respiratory cycle, if any? Birnbaum and Thompson²⁷ presented evidence indicating that suction is beneficial for the reason that it stimulates inspiratory sensory fibers in the vagi. This is the only suggestion that has been made indicating that suction directly affects respiration other than that suction assists respiration in the presence of hypotonic muscles associated with feeble respiration or the absence of respiration. Comroe and Dripps,²⁸

22. Rost, E.: *Ztschr. f. d. ges. exper. Med.* **82**: 255, 1932.
23. Thompson, S. A., and Birnbaum, G. L.: *Surg., Gynec. & Obst.* **74**: 1078, 1942. Thompson, S. A., and Birnbaum, G. L.: *Surgery* **12**: 284, 1942. Birnbaum, G. L., and Thompson, S. A.: *J. Thoracic Surg.* **12**: 607, 1943. Thompson, S. A., and Birnbaum, G. L.: *ibid.* **12**: 624, 1943. Birnbaum and Thompson.
24. Thompson, S. A.: *Ann. Surg.* **120**: 94, 1944.
25. Steinberg, B., and Dietz, A.: *J. Lab. & Clin. Med.* **29**: 695, 1944.
26. Drinker, C. K.; Drinker, K. R.; Shaw, L. A., and Redfield, A. C.: *J. Indust. Hyg.* **5**: 109, 1923.

27. Birnbaum, G. L., and Thompson, S. A.: *Surg., Gynec. & Obst.* **75**: 79, 1942.

28. Comroe, J. H., and Dripps, R. D., Jr.: *Ann. Rev. Physiol.* **7**: 653, 1945.

however; suggest that "a moderate weight applied to the chest wall will probably serve as well without incurring the risks involved with suction." It might be rejoined that the "moderate weight" would increase the amount of positive pressure required and, it might be asked, What risks does —8 mm. of mercury of suction introduce when applied at a mask with an "airway" in position? Nevertheless, in our opinion, the observations of Thompson and Birnbaum call for confirmation.

Maloney²⁹ has suggested that expiration by suction removes noxious gases better than passive expiration. This would be difficult to prove unless the minute volume of respiration is carefully controlled.

Birnbaum and Thompson²⁷ suggest that resuscitators of the suck and blow type by "milking" blood from the lungs significantly improve the return of blood to the heart. This suggestion could not be substantiated by Volpitto, Woodbury and Abreu.³⁰ These investigators found that, "irrespective of the method of mechanical artificial respiration employed, recovery of the animal was accomplished when respiratory arrest and slow weak cardiac contractions were produced with helium" inhalation. They also found that the effect of the various mechanical methods on the pulmonic and systemic blood pressure was essentially the same.

While our work was in progress a paper by Orth and his colleagues²⁰ appeared in which they reported results on the effect of artificial respiration on the lungs. Using fewer animals than we have employed, they arrived at essentially the same conclusion, which is warranted by the results of our investigation. Their conclusion was as follows: "Pulmonary damage was present in control groups of animals either sacrificed and examined without any period of anesthesia or respiratory manipulations or subjected only to anesthesia in which respiration occurred spontaneously. Similar damage was evident in groups of animals subjected to various methods of artificial respiration."

THE EXPERIMENTAL DESIGN

Four series of experiments were performed. Series A consisted of 102 dogs which were used as a control series to ascertain the incidence of pulmonary disease in laboratory dogs as they were selected by us for this study during the late fall and winter months. Series B consisted of 25 dogs which were used to study pulmonary disease after use of the E and J Resuscitator for from one to three hours when the respiratory muscles were paralyzed with curare and the animals under anesthesia. Series C consisted of 5 dogs which were used to ascertain whether the use of the resuscitator in the presence of natural breathing would cause emphysema. Series D consisted of 22 dogs which were used to ascertain whether the use of other resuscitators damaged the lungs or interfered with blood pressure.

The dogs weighed 5 to 12 Kg. All were "clinically normal" as judged by appearance, behavior and the absence of the signs of distemper or other disease. X-ray films of the chest were not made because of the scarcity of x-ray film. Physical examination of the chest in the untrained dog is not satisfactory.

A. The Control Series.—One hundred and two dogs served as a control series; they were killed either by bleeding during pentobarbital anesthesia or at the end

of an experiment of two hours' duration under anesthesia with natural breathing. The lungs and trachea of these dogs were then examined grossly and all lesions were measured, described and recorded.

B. The Treated for Recovery Series.—Twenty-five dogs served as the "treated series." They were anesthetized with pentobarbital and the femoral artery was connected to an apparatus for recording blood pressure. Respiratory movements were recorded by means of a pneumograph held in place by a towel at the level of the xiphoid. The femoral vein was cannulated to facilitate the injection of curare along with 0.9 per cent solution of sodium chloride. In several of the earlier experiments a tape measure was fixed in place about the lower part of the chest to measure the excursion during natural breathing and later artificial respiration. In several of the earlier experiments the parietal pleura at the fifth interspace was exposed to observe the movement of the lungs during natural and artificial respiration through the parietal pleura without opening the thorax. Between observations this wound was snugly covered with gauze held in place beneath the skin with clips.

The artificial respiration was given through a mask of the type commonly employed for the study of oxygen consumption in unanesthetized dogs. The fit of the rubber diaphragm of the mask about the neck was such that leaks were absent or insignificant and did not interfere with the effectiveness of the artificial respiration. The positive and negative pressure in the mask was observed by a sensitive aneroid pressure gauge recording in $\frac{1}{4}$ inch of water pressure.

The E and J. Resuscitator was used for artificial respiration. It is designed to provide a gas for inhalation (an inhalator) or a gas for positive and negative pressure artificial respiration. The maximum positive pressure provided is 14 mm. of mercury (19 cm. of water); the maximum negative pressure is 9 mm. of mercury (12 cm. of water). These pressures, of course, obtained in all of the twenty-five experiments. The apparatus was set to cycle fourteen or fifteen times per minute. The volume of gas flow per minute, as measured by a Precision flow meter introduced in the circuit in dogs of various weights, varied from 300 to 500 cc. per minute. In a dog weighing 9 Kg., for example, the minute volume of ventilation, using 100 per cent oxygen, was 400 cc. In the first 10 dogs 100 per cent oxygen was used and in the last 10 dogs 3 per cent carbogen (3 per cent carbon dioxide and 97 per cent oxygen), and in 5 both 100 per cent oxygen and 7 per cent carbogen.

The E and J Resuscitator was chosen because it has both positive and negative pressure. It was assumed that if the apparatus caused no lung damage or deleterious circulatory effects the results would apply not only to other "suck and blow" devices with the same maximum pressures but also to intermittent positive pressure devices having the same maximum positive pressure.

After making control observations for fifteen or twenty minutes, curare was injected to paralyze the muscles of respiration. A dose of 0.5 cc. per kilogram of body weight of Merck's curare solution number 569 was adequate usually to paralyze completely or almost completely the diaphragm and intercostal muscles. Occasionally additional amounts were required. In an occasional dog in which very feeble movements persisted, doses of 2 cc. per kilogram of body weight were

29. Maloney, A. H.: *Anesth. & Analg.* 23: 39, 1944.

30. Volpitto, P. P.; Woodbury, R. A., and Abreu, B. E.: *Influence of Different Forms of Mechanical Artificial Respiration*, J. A. M. A. 126: 1066 (Dec. 23) 1944.

ineffective. Larger doses were not given because we did not consider complete paralysis necessary for our purpose. The resuscitator was started after the curare was injected and at the point of almost complete paralysis of the muscles of respiration. At fifteen minute intervals the resuscitator was turned off and the inhalator on for one or two minutes to ascertain the state of activity of the respiratory muscles. This was done because Stewart³¹ has observed that at times during resuscitation of the respiratory center from anemic anoxia with the vagi intact the rhythm of the artificial respiration is impressed on the respiratory center.

Appreciable endogenous respiratory movements occurred after from thirty to ninety minutes. In half of the dogs it occurred between thirty and sixty minutes and in the remainder after sixty minutes (table 2). When endogenous movements returned, the artificial respiration was continued except for brief periods until the animal could maintain the oxygenation of the blood sufficiently to allow recovery. This means that all the dogs received artificial respiration for from one up to three hours. We did not maintain the animals longer because we believed that "suck and blow" devices will be ordinarily used for resuscitation for a period of less than an hour.

When the animal's natural breathing was adequate, the wounds were aseptically closed, 10 mg. of ephedrine was injected subcutaneously and the animal was kept warm until it recovered from the anesthesia. (The animal was also kept warm during the experiment.) The animals were killed three days later by the following procedure: The animal was anesthetized with pentobarbital. The trachea and carotid artery were exposed. The animal was then bled and the trachea clamped at the end of inspiration. The chest was then carefully opened to ascertain whether pneumothorax or collapse of a lung was present. The lung was then examined, including a search for evidence of interstitial and mediastinal emphysema; sections were taken for microscopic examination in a few instances.

Only 1 dog was killed immediately after the period of the artificial respiration; he had been under the artificial respiration for over two hours. There was no evidence of interstitial or mediastinal emphysema. Other animals in this group were not studied because we were interested only in whether damage of a significant degree would occur, because it did not occur in the experiments of Marcotte and his colleagues,¹⁸ who used 18 mm. of mercury of continuous intrabronchial pressure for eighteen to seventy-five minutes in the dog, and because we desired to look for emphysema under a somewhat more rigorous condition.

C. In order to ascertain whether interstitial or mediastinal emphysema might occur under the pressure conditions imposed by the E and J Resuscitator in the presence of natural breathing, the following method was used:

The dogs were anesthetized with pentobarbital and fitted with a pneumograph. The mask was fitted and a control record of respiration was made. Then the E and J Resuscitator was started with 100 per cent oxygen and kept operating for one hour; after that, 7 per cent carbogen was administered for ten minutes. The dog was then killed by bleeding and the trachea clamped at the end of an inspiration. The chest was carefully opened, as stated before; the lungs and mediastinum were inspected with a 16 diameter magnifying

lens, and sections were taken immediately for microscopic study.

D. Experiments were also performed in which the return of blood pressure to normal after the injection of curare was studied in relation to the type of resuscitator used. We used (a) the E and J Resuscitator, (b) an intermittent positive pressure resuscitator with some continuous insufflation at 10 mm. of mercury pressure, (c) the G. E. Pneumolator, which is a positive pressure (14 mm. of mercury) resuscitator, and (d) the Drinker respirator for infants.

RESULTS

The pathologic findings are summarized in table 1.

A. *Control Series.*—Of the 102 dogs in the control series 15, or 15 per cent, had a patch or patches of consolidation varying from 1 cm. in diameter up to as many patches as would yield an estimated total of 33 per cent consolidation. The consolidation ranged from 10 per cent to 30 per cent in 7 of the 15 dogs, or 7 per cent of the 102 dogs. Sixteen, or 15 per cent, of the remaining had minor pathologic changes consisting of petechial or small ecchymotic hemorrhages, scars or marginal emphysematous blebs. Seventy-one had perfectly normal lungs.

This shows that in the absence of a careful physical examination of the chest, or a roentgenogram, during the winter months 7 per cent of dogs can have an appreciable bronchopneumonia and appear "clinically normal."

B. *Treated for Recovery Series.*—Two dogs died, 1 at forty-eight and the other at seventy-eight hours after recovery from the experiment; both had bronchopneumonia. The one that died at forty-eight hours had an area of consolidation measuring 12 by 8 by 4 cm. The central portion of the area manifested gray hepatization. The lobe had other small patches of bronchopneumonia. The one that died at seventy-two hours had an area of consolidation of 6 by 4 by 4 cm. and other small patches of bronchopneumonia. This dog had some empyema and pneumothorax, which was due to the rupture of three marginal emphysematous blebs at the margin of the consolidated area described. There were areas of gray hepatization in the consolidated area. The presence of gray hepatization strongly indicates that pneumonia had been present for five days or was present at the time of the experiment. This interpretation is sustained by the findings on the control series. Minor changes were found in 4 (16 per cent) of the dogs.

Considering the control series, pathologic findings in this group cannot be attributed to the treatment. The study of the sections simply confirmed the gross diagnosis. The treatment may have aggravated the existing pneumonia, but this is not proved, and a very large series would be required to prove it. Joannides³² reports that pneumonic, consolidated, dark colored lungs when subjected to increased intrapulmonic air pressure (25 to 35 mm. of mercury in the dog) either inside or outside of the body became crepitating and pinkish red again. He does not recommend that positive pressure be used in pneumonia, however.

C. *Treated During Natural Breathing.*—Interstitial or mediastinal emphysema was not found by microscopic examination or by examination under a magnifying lens in the dogs given artificial respiration during natural breathing.

31. Stewart, G. W.: *Am. J. Physiol.* 20: 407, 1907.

32. Joannides, Minas: Insufflation of Compressed Air in the Treatment of Pneumonia, *Arch. Int. Med.* 47: 196 (Feb.) 1931.

In this group of experiments it was found, as in the foregoing experiments, that some dogs during natural breathing followed the artificial respiration and some did not. At times the same dog would follow the rhythm of the machine and then again would not, as shown in the tracing. In no instance was the lack of synchronization between natural breathing and the machine serious.

TABLE 1.—Incidence of Lung Abnormalities in Resuscitated Dogs Compared with Dogs Which Received No Resuscitation Treatment

Lung Condition	Resuscitated Dogs		Control Dogs	
	Number	%	Number	%
Bronchopneumonia.....	2	8	15	15
Minor pathologic changes.....	4	16	16	15
Normal.....	19	76	71	70
Total.....	25	100	102	100

The only evidence of interference was a notch in the normal respiratory curve. The minute volume of ventilation remained the same except when the natural respiratory excursion was small; then the minute volume was greater with the machine.

D. Observations on the Circulation with Three Resuscitators and One Respirator.—The curare was injected rather rapidly with the idea of obtaining a fall in blood pressure so that the effect of the various methods of artificial respiration on the return of blood pressure could be ascertained. After the injection of curare the blood pressure fell to a level which ranged from 30 to 60 mm. of mercury. It remained at this level for a variable period, usually four to ten minutes, and then slowly rose. As a general rule the blood pressure had returned approximately to the control level at the time spontaneous respiration returned. But, as stated before, the artificial respiration was continued until the spontaneous respiration was adequate to maintain the animal, since we desired to have the animal recover for postrecovery observation.

The averaged results on the return of blood pressure are shown in table 2. The results show that the time

TABLE 2.—A Comparison of the Rate of the Return of a Low Blood Pressure Due to Curare When Various Devices for Artificial Respiration Are Used

Type of Resuscitator Used	Number of Experiments	Blood Pressure		Return of Spontaneous Respiration Time, Min.	Pressure Resuscitatory Cycle	
		Before Curare, Mm. Hg	After Curare, Mm. Hg		Positive, Mm. Hg	Negative, Mm. Hg
E & J Resuscitator..	20	126	100	42	14	8
G. E. Positive.....	7*	130	104	60	14	0
B. Positive.....	8	136	100	23	10	0
Drinker Respirator..	7	128	108	41	8	0

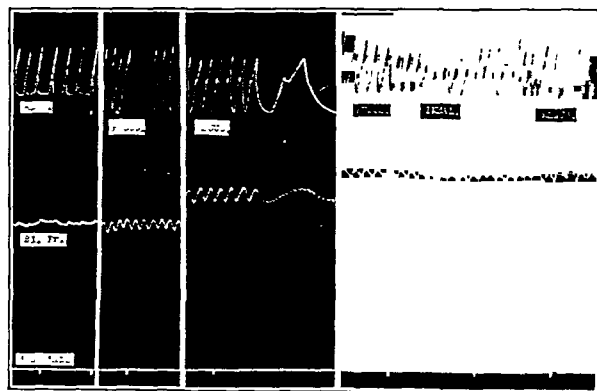
* One dog was killed when, at about two hours, it appeared that the blood pressure would not return to the control level; that may have been due to an overdose of pentobarbital.

for the return of blood pressure to normal did not vary significantly when the E and J Resuscitator, the G. E. Pneumolator (intermittent positive pressure), the B. Resuscitator (intermittent positive pressure with some continuous insufflation) or the Drinker Respirator (infant type) was used. We interpret the results as showing that neither of the types of artificial respiration with the pressures employed interfered significantly with venous return. If a difference does exist, many animals would have to be used to prove it because of the variation which exists in different animals.

SUMMARY AND CONCLUSIONS

1. One hundred and two "clinically normal" dogs were studied for the incidence of pulmonary disease. The chest was not examined carefully for physical findings because this is difficult in the untrained animal. X-ray films of the chest were not made because of the scarcity of film. Fifteen per cent of the animals had bronchopneumonia, the areas of consolidation ranging from 10 to 30 per cent in 7 per cent of the dogs. Fifteen per cent of the animals had minor pathologic changes, such as petechial or small ecchymotic hemorrhages, scars or marginal emphysematous blebs. In the remainder (70 per cent) the lungs were normal.

2. Twenty "clinically normal" dogs were anesthetized, given curare and artificial respiration with the E and J Resuscitator, a suck (—9 mm. of mercury) and blow (+14 mm. of mercury) type, for one to three hours. The animals were then permitted to recover and were killed three days later and the lungs examined by a method permitting the discovery of pneumothorax and interstitial or mediastinal emphysema. Two dogs (8 per cent) died of bronchopneumonia within seventy-eight hours; since gray hepatization was present, the bronchopneumonia must have been present at the time



Illustrating that an animal in coma (anesthetized) but breathing naturally may or may not follow the rhythm of a mechanical resuscitator of the "suck and blow" type. In the first section of the tracing the animal was breathing naturally. In the second section the E and J Resuscitator was ventilating the animal (note that the animal is "following" the resuscitator). In the third section the animal is apparently not "following" the resuscitator. In the fourth section the animal is apparently not "following" the resuscitator, but when the resuscitator is turned off and the animal allowed to inhale 100 per cent oxygen without pressure naturally the natural respiration is irregular, a condition which continues after the resuscitator is turned on again. An irregularity of the respiratory excursion may occur during natural breathing in anesthetized or comatose animals.

of the experiment. Four (16 per cent) of the dogs had minor pathologic changes in their lungs. In the remainder (76 per cent) the lungs were normal.

3. There is no evidence in this study that artificial respiration of the suck and blow type (+14 mm. of mercury and —9 mm. of mercury) caused lung damage.

4. In 5 anesthetized dogs given artificial respiration with the E and J Resuscitator for one hour in the presence of natural breathing no evidence of emphysema was found.

5. The rate of return of blood pressure to the control level after the administration of curare was studied when dogs were given artificial respiration by various mechanical methods for one to three hours. The E and J Resuscitator was used on 20 dogs, the General Electric intermittent positive pressure Pneumolator on 7, the B intermittent positive pressure device on 8 and the Drinker Respirator on 7. No difference was found.

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SATURDAY, DECEMBER 29, 1945

INFECTION AND REINFECTION IN TUBERCULOSIS

Since the work of Parrot, Küss, Ghon, Ranke and many others there has remained little doubt that the origin of tuberculous disease in infants and young children is almost exclusively the first contact with tubercle bacilli. Furthermore, Koch, Romer, Krause and many others found that it was difficult to superinfect an active infection in experimental animals. By analogy an exogenous reinfection in children before 3 years of age probably does not occur often if at all, because the lesions do not have time to heal within that time.

At one time most adult tuberculosis was thought to arise from these early infections. Late in the last century Behring made the often quoted statement that fatal tuberculosis was the "last verse of the song begun in the cradle." Not all were in agreement with Behring's hypothesis, however, because Nägeli, Orth and others had been reporting the presence of healed calcified tuberculous lesions on necropsy in practically every adult. As late as 1926 Schürmann¹ found that almost all adults possessed some tuberculous lesions—mostly healed and calcified. The tuberculin reaction supported the finding of a nearly universal infection in the large centers of population. The use of tuberculin by Hamburger and Monti,² Armstrong,³ Veeder and Johnston⁴ and others indicated that most of the people in the large centers of population were infected by the time they reached adult life. With apparently so many lesions existing in the world, it seemed probable that healing must take place or every one would be ill or have latent disease. Although many early experiments reported a high percentage of tubercle bacilli in calcified

tuberculous lesions, Rabinowitch⁵ and Aronson and Opie⁶ found a much lower percentage of positive lesions. More recent studies⁷ have demonstrated that only a small percentage of the lesions contain living tubercle bacilli. Practically none of the "petrified" or "ossified" lesions contain living bacilli. The conclusion was correct that most calcified lesions were probably healed.

The next logical question was whether these healed infections protect against subsequent reinfections, as animal experiments seemed to indicate. Many felt that there was real immunity conferred by a healed infection. Even if all the lesions were healed and afforded complete protection (as they surely do not) not all persons were infected in early life. Bushnell,⁸ Borrel⁹ and others showed that aboriginal people presented less evidence of infection as they were remote from civilization. A similar variation also existed in certain civilized communities. In rural Minnesota as early as 1924 Slater¹⁰ found that only 10 per cent of high school children had positive tuberculin (Pirquet) reactions by the time of graduation. Scheel¹¹ in Norway, Myers¹² in Minneapolis and Taylor¹³ in Iowa supported Slater's observations.

Not only did tuberculosis vary from place to place, but there was increasing evidence that the incidence of the disease was rapidly decreasing. The best confirmation of this statement, besides the decrease in mortality, was the work of Chadwick and Zacks¹⁴ in Massachusetts, who found the incidence of the disease in 1930 to be about half that found by Armstrong in 1917. Furthermore, Chadwick and Pope¹⁵ found 28 per cent positive tuberculin reactions in grade school children in 1924 and only 14 per cent positive in 1939. It is evident that there is a vast difference in the tuberculosis infection rate, total infection, morbidity and mortality in different parts of the world, even in different parts of every country, and the incidence is changing all the time. Except in war and famine, at least in the more civilized countries, the rate is decreasing.

Observations reported on special groups of patients should not be deceptive. For example, the fact that

5. Rabinowitch: Experimentelle Untersuchungen über die Virulenz latenter tuberkulöser Herde, *Ztschr. f. Tuberk.* **15**: 217, 1910.

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7. Feldman, W. H., and Baggenstoss, A. H.: Residual Infectivity of Primary Complex of Tuberculosis, *Am. J. Path.* **14**: 473 (July) 1938. Sweeney, H. C.; Levinson, S. A., and Stadnichenko, A. M. S.: Tuberculous Infection in People Dying of Causes Other Than Tuberculosis, *Am. Rev. Tuberc.* **48**: 131 (Sept.) 1943.

8. Bushnell, G. E.: Tuberculosis and Epidemiology, *Mil. Surg.* **51**: 508 (Nov.) 1922.

9. Morrel, A.: *Pneumonie et tuberculose chez les troupes noires*, *Ann. Inst. Pasteur*, Paris **34**: 105, 1920.

10. Slater, S. A.: Results of Pirquet Tuberculin Tests on 1,654 Children in Rural Community in Minnesota, *Am. Rev. Tuberc.* **10**: 299 (Nov.) 1924.

11. Scheel, O.: Comparative Study of Tuberculin Reactions and Radiological Findings, *Lancet* **1**: 922 (April 17) 1937.

12. Myers, J. A.: Detection of Tuberculous Infection, *J. A. M. A.* **112**: 1904 (May 13) 1939.

13. Taylor, W. Merritt: Diagnosis of Tuberculosis in Early Life, *J. Oklahoma M. A.* **18**: 233 (Oct.) 1925.

14. Chadwick, H. D., and Zacks, D.: Incidence of Tuberculous Infection in School Children, *Am. Rev. Tuberc.* **22**: 626 (Dec.) 1930.

15. Chadwick, H. D., and Pope, A. S.: The Modern Attack on Tuberculosis, *Am. J. M. Sc.* **189**: 253 (Feb.) 1935.

1. Schürmann, P.: Der Primärkomplex Rankes unter den anatomischen Erscheinungsformen der Tuberkulose, *Virchows Arch. f. path. Anat.* **260**: 664, 1926.

2. Hamburger and Monti: Die Tuberkulosehäufigkeit im Kindesalter, *München. med. Wchnschr.* **56**: 449, 1909.

3. Armstrong: The Framingham Demonstration: The von Pirquet Survey, *Bull. Nat. Tuberc. A.*, 1919.

4. Veeder, B. S., and Johnston, M. R.: The Frequency of Infection with the Tubercle Bacillus in Children, *Am. J. Dis. Child.* **9**: 478 (June) 1915.

practically all infants and young children who die of tuberculosis do so as a result of the primary infection does not indicate that a larger number of childhood infections survive, as shown by Bernard¹⁶ and by Kjer-Petersen and Ostenfeld.¹⁷ The majority of these survivors live to become reinfected later. The same may be said regarding the question of endogenous reinfection, as reported by Sweany,¹⁸ Pagel¹⁹ and others. Although young adults in particular show a preponderance of endogenous reinfections, it must be remembered that many more infections heal than result in death and in healing become subject to later reinfections.

The percentage of persons who heal compared to those who die is not known, largely because there are so many variable factors, but there is little doubt that for every person dying of tuberculosis many more survive, and the proportion of survivors to those infected increases in the older age groups. Exogenous reinfection, therefore, increases in importance with age. As the percentage of uninfected persons increases, that is, as adult life and old age are attained without a first infection, reinfections become less and less significant. The time has by no means come, however, to disregard reinfection on that account.

Theoretically, then, infection and reinfection can occur at any time if the dosage and virulence of the bacilli are high enough and if the host has a low resistance as the result of a susceptible age, sex or race or if there has been a loss of resistance, as in old age. This holds true also in any case in which the first infection was slight and a long interval of time elapsed between the first infection and the reinfection. A patient with active tuberculosis expels millions of bacilli daily, may infect any one, and therefore is a menace not only to the uninfected but also to those in the older age group who have healed infections.

Old age tuberculosis has no doubt been largely overlooked in the past except at necropsy. Recently there have been a number of reports on tuberculosis in persons in the older age groups—probably not because the disease is more prevalent but because better diagnoses are being made.

Probably well over half of the fatal cases of tuberculosis still arise endogenously from the first infection, and as the infection rate decreases the importance of reinfection decreases. There is, however, a large percentage of clinically significant and even fatal disease in which the infections are due to exogenous reinfections, which may be few in the young, many in early middle life and quite prevalent in the old.

ANTITOXIC ACTION OF PENICILLIN

Boor and Miller¹ of the Kuppenheimer Foundation, University of Chicago, have recently demonstrated that penicillin has a synergic neutralizing action on certain endotoxins. Endotoxins were prepared from six strains of type I and one strain of type II meningococcus. The concentration of each preparation was so adjusted that 0.3 to 0.5 cc. injected intraperitoneally killed at least 4 of 5 mice within thirty hours. Among 179 untreated control mice thus injected 159 died within thirty hours, a mortality of 89 per cent. In comparison 74 mice were injected intraperitoneally with the same doses mixed with 1,000 or more units of penicillin. Of these 59 died within the prescribed time limit, a mortality of 80 per cent. Boor concluded from these percentages that penicillin acting in vitro on meningococcus endotoxin does not reduce its toxicity to any significant degree. This conclusion accords with that previously reported by Neter and Will,² who found that tetanus toxin mixed with sodium penicillin was as toxic as tetanus toxin alone.

In a second series of experiments Boor injected the same amounts of endotoxin intraperitoneally into mice which were treated by a series of subcutaneous injections with penicillin. Of 373 mice thus treated 122 died, a mortality of but 33 per cent.

The antitoxic effect was even more apparent in several groups of mice injected with smaller doses of endotoxin. One group of 24 mice was injected with but 0.25 cc. of standard endotoxin. The control mortality was 100 per cent, contrasted with but 20 per cent mortality among those given subcutaneous penicillin therapy. Experiments were also done on rabbits. In rabbits the endotoxin was injected intravenously and penicillin given subcutaneously in doses of about 10,000 units every few hours. All untreated control rabbits died within twenty-four hours (mortality 100 per cent). Among 16 treated rabbits 14 survived and 2 died at thirty-six and forty-five hours respectively, a mortality of but 12.5 per cent.

These experiments confirmed the previous conclusion that penicillin repeatedly administered subcutaneously is able to exert a considerable degree of protection against the lethal effects of meningococcus endotoxin. This protective action is almost completely destroyed when penicillin is inactivated with penicillinase.

The Chicago investigators have not yet proposed a theory to account for this presumptive synergistic antitoxic effect of penicillin, a new phenomenon of clinical promise.

16. Bernard, Leon: *Les débuts et les arrêts de la tuberculose pulmonaire*, Paris, Masson et Cie, 1931.

17. Kjer-Petersen, R., and Ostenfeld, J.: *Positive Pirquet Test in First Three Years of Life*, *Ugesk. f. læge* 92:865 (Sept. 11) 1930.

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19. Pagel, W.: *On the Endogenous Origin of Early Pulmonary Tuberculosis*, *Am. J. M. Sc.* 159:253 (Feb.) 1935.

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2. Neter, Erwin, and Will, Jessie: *Effects of Penicillin, Clavacin and Streptomycin on Tetanus Toxin*, *J. Bact.* 48:261 (Aug.) 1944.

Current Comment

FIBROSITIS OF THE BACK

Copeman and Ackerman¹ reported in 1944 a clinical study of "fibrositis" of the back in which the pain was studied clinically and the occurrence of trigger points confirmed. The exact situation in which these occurred in a large number of patients was charted and the pain pattern of definite shape obtained. The dissection of 14 bodies of persons dying from various causes, excluding those of fibrositis, established the existence of a basic fat pattern. This fat pattern was observed to correspond exactly in shape and situation with the pain pattern already charted. Lesions suggestive of inflammatory reaction were not found in any deep fibrous tissue, but certain abnormalities affecting the lobules of the fat pattern were found in several instances. The abnormality which seemed most likely to have clinical significance was the herniation of certain fat lobules through weaknesses or actual deficiencies in the walls of their investing fibrous tissue. A series of 10 biopsies of selected patients suffering from fibrositis were reported in full. Although the authors think that the microscopic lesions described in the removed fat may be causative of the pain, they believe that its basic origin lies in an increase of tension in the fat lobules affected where they are invested by a nondistensible fibrous membrane. The anatomic lesions found were probably a later result of this condition where it persists. Further clinical support to the concept of herniation of fascial fat as a cause of back pain is offered by Herz,² who reports a striking relief of pain in 6 patients suffering from excruciating pain in the back. In all of his cases there was a history of trauma due to strain, which had initiated the pain. Pain in the back was extremely severe in all and in some instances was referred down one leg. In all cases a definite mass was palpable which was extremely tender, and pressure on it intensified the pain. Injection of these masses with procaine solution provided temporary relief in all instances. In these 6 cases, fairly wide dissection of fat in the painful area has relieved the pain whether or not the herniation could be clearly delineated. Mylechreest,³ who dissected 12 backs of bodies post mortem, furnishes additional information. In several of the bodies a herniation of fat from one layer of fascia to another was found. In 12 biopsies on selected patients suffering from fibrositis of the back, fatty lobules under tension or fatty hernias were discovered. Their removal resulted in cure in most cases or striking relief in those not completely cured. The fat hernia, according to Mylechreest, may be congenital in origin, where a mass of fat passes through one or more layers of fascia through well defined gaps, or acquired, the result of a mechanical or postural factor. The pain of "fibrositis" may be due to pathologic changes found in these areas, namely edema of the fatty tissue, hemorrhage, congestion or

torsion of the pedicle of the prolapsed lobule. Herz suggests that the operation for the release or removal of prolapsed herniation of fascial fat is not a panacea for all types of low back pain. However, if the possibility of such a lesion is recognized and a careful examination is made for palpable masses which may prove to be trigger points of pain, numerous patients may by this procedure be relieved of a condition that has been incapacitating, sometimes for many years.

CONFERENCE ON BARBITURATES

The Committee on Legislation of the American Pharmaceutical Association recently called a conference to study the promiscuous distribution of the barbituric acid compounds. The meeting was attended by representatives from the American Pharmaceutical Association, American Medical Association, Food and Drug Administration, U. S. Public Health Service, U. S. Bureau of Narcotics, American Dental Association and other groups and agencies. Discussion was held on barbiturate regulation, barbiturate habituation and tolerance and the medical, pharmaceutical and legal aspects of the problem. At this time fourteen states and the District of Columbia have no law regulating the sale and distribution of barbiturates. The laws in the other states are not uniform and have been subjected to much abuse. Today many people are aware of the action of this group of drugs; accidental deaths, suicides and ill health directly attributable to the effect of the drugs are on the increase. Careless prescribing, direct sales to the consumer and "bootleg" distribution have aided those who are determined to get the drug. Some have proposed the adoption of a federal law which would regulate the distribution of barbiturates much as opium derivatives are now controlled. More are in favor of control on the state level, particularly if a uniform state act can be formulated and adopted. The problem needs much study. Further study should develop a satisfactory solution.

PROMIN IN LEPROSY

Faget and Pogge¹ at the National Leprosarium in Carville, La., report clinical improvement in 137 patients with lepromatous and mixed types of leprosy treated with promin. The drug acts slowly, and improvement usually becomes manifest only after six or more months of treatment. The longer the duration of promin therapy and the larger doses of the drug tolerated, the greater is the degree of improvement. Since *Mycobacterium leprae* cannot be cultivated on artificial mediums nor the human disease reproduced in laboratory animals, bacteriostatic or bactericidal action of promin is difficult to prove. However, 62 patients were treated with promin for more than one year, with diminution in the number of *M. leprae* organisms in the lesions in at least 40 per cent. Research may produce a faster acting, more specific, drug for the mycobacterial diseases, but promin is considered the best experimental treatment thus far tested at the National Leprosarium.

1. Copeman, W. S. C., and Ackerman, W. L.: "Fibrositis" of the Back, *Quart. J. Med.* **13**: 37 (April-July) 1944.
2. Herz, Ralph: Herniation of Fascial Fat as a Cause of Low Back Pain, *J. A. M. A.* **128**: 921 (July 28) 1945.
3. Mylechreest, W. H.: Investigation into the Etiology and Pathology of Fibrositis of the Back, *Ann. Rheumat. Dis.* **4**: 77 (June) 1945.

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MEDICINE AND THE WAR

ARMY

DISTINGUISHED SERVICE MEDAL

Major General George F. Lull

Major Gen. George F. Lull, Deputy Surgeon General of the Army, was recently awarded the Distinguished Service Medal for "exceptionally meritorious conduct in the performance of outstanding services in the Office of the Surgeon General from June 1940 to August 1945." The citation accompanying the award stated that "in his capacity as chief of personnel service he was responsible for developing plans to augment the various officers' corps and the enlisted and civilian personnel of the Medical Department during the nation's first total mobilization of medical manpower. As Deputy Surgeon General he was largely responsible for establishing policies and directing studies which resulted in many outstanding medical achievements such as the advancement in preventive health measures, the remarkably low incidence of disease and the low mortality from both disease and battle wounds. General Lull's skilful discharge of difficult duties and his devotion to the mission of the medical department contributed in important degree to the success of the Army's unprecedented medical program." General Lull graduated from Jefferson Medical College of Philadelphia in 1909 and was commissioned in the Army Medical Reserve in 1912.

Major General Shelley U. Marietta

Major Gen. Shelley U. Marietta, commanding general of Walter Reed General Hospital, Washington, D. C., was also the recipient of the Distinguished Service Medal. The citation accompanying the award stated that as commanding general of Walter Reed General Hospital as well as of the Army Medical Center and a commandant of the Medical Department Professional Service Schools from December 1939 to August 1945 he "displayed outstanding leadership and administrative and professional ability of a high order in discharging his highly responsible duties. He organized and trained medical department units and personnel in medicomilitary activities while at the same time carrying out his responsibilities for the proper performance of the many-times expanded missions of the Army Medical School, the Enlisted Technicians School, the Army Dental School, the Army Veterinary School and the Walter Reed General Hospital. Under his guidance the armywide needs for blood plasma and both the Army and Navy needs for immunizing biologicals were always fulfilled. He helped pioneer numerous innovations for the care and treatment of the sick. General Marietta's contribution to the war effort, made possible by the diligent application of his exceptional talents, was an important one and reflects highest credit on himself and the military service." General Marietta graduated from the University of Illinois College of Medicine, Chicago, in 1909 and entered the service May 1, 1912.

Brigadier General James S. Simmons

Brig. Gen. James S. Simmons, Washington, D. C., was recently the recipient of the Distinguished Service Medal. The citation stated that "the service he organized and developed carried out a worldwide program of military and civil public health which secured both immediate and enduring benefits by reducing hazards to the health of the troops, civilians engaged in essential war work, and refugees and displaced persons. By applying the best available knowledge and fostering research, he developed and extended new information on the causes and prevention of communicable diseases, on the improvement of nutrition for soldiers and on the reduction or elimination of the health hazards of mechanized warfare and industrial occupations. His teachings, influence of personality and adherence to ideals inspired and established a positive concept of health for troops and civilians. With

extraordinary foresight he was in advance of events, devising measures for health protection before critical needs arose, and with dynamic energy he overcame severe difficulties. By protecting the health of the Army and conserving the health of the nation, General Simmons contributed to winning the war." General Simmons graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1915 and entered the service Feb. 10, 1917.

Brigadier General Raymond W. Bliss

Brig. Gen. Raymond W. Bliss, assistant Surgeon General of the Army, received the Distinguished Service Medal for "exceptionally meritorious conduct in the performance of outstanding service from June 29, 1943 to Aug. 31, 1945." The citation further stated that "General Bliss was responsible for the development and supervision of the medical plan in overseas theaters and in the zone of interior, which through its excellence provided the finest medical service in the history of the Army and resulted in the lowest morbidity and mortality experience. Through personnel planning and control, through specialization of facilities, through the furtherance of such new developments as air evacuation and convalescent hospitals, General Bliss contributed uniquely to the treatment and welfare of the sick and wounded and the accomplishment of the medical mission." General Bliss graduated from Harvard Medical School, Boston, in 1910 and was commissioned in the Army Medical Reserve Corps in 1911.

ARMY MEDICAL LIBRARY HONORARY CONSULTANTS MEET

The second annual meeting of Honorary Consultants to the Army Medical Library was held recently in Cleveland for the purpose of electing officers to the association. The following officers were elected: Dr. John F. Fulton, president; Dr. Chauncey D. Leake, vice president; Col. Harold W. Jones, secretary-treasurer. Major Gen. George F. Lull was elected on the executive committee.

ARMY AWARDS AND COMMENDATIONS

Colonel William S. Middleton

The Legion of Merit was recently awarded to Col. William S. Middleton, formerly of Madison, Wis., for "outstanding services as chief consultant in medicine, Professional Services Division, Office of the Chief Surgeon, in which capacity he established and directed the consultative services in medicine in the European theater." Dr. Middleton graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1911 and entered the service April 27, 1942.

Colonel Paul G. Hansen

Col. Paul G. Hansen, formerly of North Olmsted, Ohio, and now attached to a medical detachment in China, was recently awarded the People's Hero Medal by the Chinese government. For the last two years he has been in charge of hospitals in central and western China. Some time ago he was awarded the Bronze Star. Dr. Hansen graduated from St. Louis University School of Medicine in 1933 and entered the service April 22, 1940.

Captain Herman Beigelman

Capt. Herman Beigelman, formerly of Boston, was recently awarded the Bronze Star for meritorious achievement in connection with military operations in Italy. Dr. Beigelman graduated from Tufts College Medical School, Boston, in 1937 and entered the service Nov. 20, 1942.

MISCELLANEOUS

AWARD OF UNITED STATES OF AMERICA
TYPHUS COMMISSION MEDAL

Col. Richard T. Arnest, formerly of Fort Benning, Georgia, was recently awarded the United States of America Typhus Commission Medal. Accompanying the award was a citation "for meritorious service in connection with the work of the United States of America Typhus Commission during the outbreak of epidemic typhus fever in southern Italy, particularly during the period from Dec. 20, 1943 to Feb. 20, 1944. Colonel Arnest from his position as surgeon, Peninsular Base Command, made available to the commission personnel and facilities. In addition he carried out all responsibility for applying measures necessary to the prevention of the occurrence of typhus fever in United States Army forces in the Naples area. His contribution not only assisted typhus control among civilians but also safeguarded the health of troops." Dr. Arnest graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1916 and entered the service July 1, 1920.

Lieut. Col. Wilson C. Williams, formerly of Nashville, Tenn., was recently presented the United States of America Typhus Commission Medal. According to the citation accompanying the award, "as deputy director of public health subsection, Allied Control Commission, and director of the typhus control branch of that subsection, he rendered extremely valuable services in planning for antityphus supplies, in training personnel and in assisting in the coordination of activities for the control of typhus during the outbreak of this disease in Naples and southern Italy during the period from December 1943 to February 1944. After the withdrawal of the United States of American Typhus Commission from control work at Naples, Colonel Williams continued an effective campaign against typhus in southern Italy." Dr. Williams graduated from Vanderbilt University School of Medicine in 1925 and entered the service Aug. 18, 1943.

A BRITISH TRIBUTE TO THE
AMERICAN PHYSICIAN

In the London *Lancet* for October 20, page 507, an anonymous writer ventures a few reminiscent thoughts relative to the association of the British physicians with their American colleagues during the period of the war. It is a charming statement in which every medical reader should take pleasure. The statement follows:

They came, at first a few and then a drove, the Æsculapiads of the New World to succour wartorn Europe. Khaki-clad and with British names and customs they shared our clubs, our meetings, and our firesides. Up sprang their hospitals almost overnight: clean wards and messrooms, well-ordered stores, theatres, and pharmacies. In their laboratories were shiny benches, virgin glassware, and crystal-clear solutions. Smart white-gaitered sentries "checked in" from their white-painted control offices. In the motor pool stood strange high monsters of the road, regimented for war and errands of mercy. There were libraries, cinemas, and baseball grounds, as well as cosy bars with lantern lights, iced fruit cocktails, and exotic wall-paintings. They shared out parcels from home in their warm Nissen huts and put up on the stark concave walls photographs of their far-away families. Off plain deal tables they ate prefabricated steaks and Maryland chickens with apricot jam. They poured out sweetcorn from cans and treated us to large fruity ices and hot chocolate sauce. There was pride in their handicraft, as their chapels showed, for only their best would do. Everywhere efficiency and quality, with sufficient of everything for the job in hand. Then came the convoys and their jobs began. The sterilisers steamed, the X-ray plants hummed, and the centrifuges roared. The purple dressing-gowns of the convalescents made their welcome appearance as blood, penicillin, and faith in the future speeded them back to their units.

The months passed and we got to know them—colonels, doctors, nurses, and enlisted men. Many were the meetings and the consultations. They treated our men and we treated theirs. They came to learn, youths of a young nation, but they taught us much. They transformed our sleepy towns into energetic schools of medicine. In leisure hours they swarmed our country lanes on bicycles and in rare bouts of sunshine played with our children on the greens, giving them candies and peanuts. Some

married our daughters and our sons. They loved our ancient churches and studied the flowers in our meadows. They had aunts to visit, ancestral homes to photograph, and souvenirs to seek. The aroma of strange tobacco pervaded our streets. Hospitable and witty, they were the possessors of good manners and good teeth. They tolerated good-humouredly our lack of central heating and culinary understanding, and enjoyed above all the humble cup of tea in the family circle. They told us of their homes and we wrote to their families. Strange world that they who speak our language, share our jokes and ancestry, and fight the same battle against disease should be reckoned foreigners to us and we foreigners to them. Citizens of the same world, we must needs be in separate sovereign States and perhaps willy nilly be required to serve separate interests.

They went as quickly as they came, for the lightning has severed the chains of bondage. The hospital trains have ceased to run. The wounded are healed and have left for home. The hospital cities are dismantled and the men in the Nissen huts have packed their books, souvenirs, and photos and filed off to the ports in their fantastic trucks. The bulldozers have levelled the last dump of empty cans and all is still. There is dust on the empty shelves of the pharmacy, the little trim gardens are overgrown, and the white sentry-box is empty. Now, only the miniature house is inhabited which the mess sergeants built for the tomtits. The abandoned huts sadden our eyes as we recall friendships fashioned in the hinterland of war. The stimulus of their presence is now a memory, for three thousand miles, and a disordered world economy, separates us from them, truly our cousins. And our lazy old town has lapsed into dreams again.

But they will write and remember us. And we shall not forget them.

PS.—I wish we had a cosy bar in our hospital.

UNRRA NEWS

Successful Experiment by Sweden

Dr. R. L. Coigny, UNRRA's medical chief for displaced persons in Europe, recently reported the success of an experiment by Sweden in cooperation with UNRRA in building up children starved by the Nazis. Though not a member of the United Nations, Sweden has accepted through UNRRA a total of 31,000 slave laborers and war victims who were in especially bad health when liberated from Nazi prison camps last spring. The Swedes provided the refugees with a diet of 4,800 calories daily, although the normal ration for Swedish citizens is only 3,800. The enjoyment of plenty following the privation and suffering experienced by these people under the Nazis has not only rehabilitated them physically at an unusual rate but has also helped to restore their mental health with remarkable rapidity. The displaced persons are housed in 150 centers of different types, some being large converted country houses, others gaily painted bungalows, all located in beautiful surroundings.

Although Sweden has borne the entire cost of their care, UNRRA is cooperating on plans for their repatriation. Originally turned over to UNRRA in Germany by the military forces after their liberation, the displaced persons were registered by UNRRA workers at Lubeck and transported across the Baltic aboard Swedish ships. The transfer took place between June 25 and July 27. Sweden has placed no specific limit on the time they may remain in hospitals or convalescent centers.

Medical Supplies to Italy

The United Nations Relief and Rehabilitation Administration, Washington, D. C., recently made a shipment of 900 tons of medical supplies for distribution through Italian government authorities, and more are on the way. Mr. Rickard K. Myers, assistant chief of UNRRA's Medical and Sanitation Supplies Division, is in Rome to aid in supervising the distribution. The shipment was made up of 23,000 separate cases of the vital medicines and equipment. Already 2,800 cases have been shipped to provinces most in need of them, including Sicily, Lucania, Campania, Abruzzi and Lazio, and they are being distributed to hospitals and health centers for immediate use. UNRRA already has provided 100 ambulances in Italy, which it obtained from military surpluses in Europe.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Burns, Charles R. D., Capt., Alabama City.
Patton, Thomas H. Jr., Capt., 12 Audubon Pl., Tuscaloosa.
Roberts, Rufus W. Jr., Capt., % R. W. Roberts, N. Y. Life Ins.
Co., Frank Nelson Bldg., Birmingham.
Snelling, David B., Major, Eutaw.
Spruell, William H., Lt. Col., Russellville.

Arizona

Creighton, Carrol C., Capt., 18 W. Aspen, Flagstaff.

Arkansas

Johnson, Julius D., Major, P. O. Box 566, Fort Smith.
King, Joe W., Capt., 310 Cherry St., Helena.
Parker, William M., Capt., DeVall's Bluff.
Walls, James M., Major, Blytheville.

California

Abbett, Arthur L., 1st Lt., 5708 Florence Ave., Oakland.
Cromenwett, Paul H., 1st Lt., 1729 Cornell Dr., Alameda.
Dresser, James T., Capt., 1621 G St., Bakersfield.
Esnard, John E., Capt., 1608 S. Durango Ave., Los Angeles.
Friedman, Meyer, Capt., 101 Point Lobos Ave., San Francisco.
Hodgdon, Frank W., Major, 1110 Arden Rd., Pasadena.
Jackle, Russell F., Major, 450 Sutter St., San Francisco.
Jeans, Virgil E., Major, 701 Patterson Bldg., Fresno.
Kaiser, Joseph E., Capt., 818 16th St., Santa Monica.
Karr, Martin, Capt., 3150 Chelsea St., San Mateo.
Kesterson, Robert L., Major, % Dr. W. J. Kesterson, U. S.
Vet. Fac., Livermore.
Kladunde, Paul W., Capt., 105 18th Ave., San Francisco.
Klein, Russell R., Capt., 723 12th Ave., San Francisco.
Lehman, H. O., Capt., 69th Coast Artillery (AA), San Diego.
Littleton, William H., Capt., 4335 Illinois St., Fresno.
Minna, John B., Major, 3790 Park Blvd., San Diego.
Mitchell, William J., Lt. Col., Alhambra.
Munal, Harold D. Jr., Capt., 1212 Shatto St., Los Angeles.
Newman, Irving G., Capt., 145 S. Reeves Dr., Beverly Hills.
Phillips, Albert D. Jr., Lt. Col., 3310 H St., Sacramento.
Price, J. B. Melville, Lt. Col., 921 Louise St., Santa Ana.
Richey, Tim V., Capt., Box 73, El Cajon.
Russell, Carroll A., Capt., 2737 22d St., San Francisco.
Shapiro, Newton H., Capt., 30 Casa Way, San Francisco.
Smith, Ernest T., 1st Lt., Glendale.
Wood, George A., Lt. Col., 1437 Hamilton Ave., Palo Alto.

Colorado

Friedman, Gerald H., Capt., 1420 Logan, Denver.
Lord, George H., Capt., 1460 Chester St., Aurora.
Stander, Thomas R., Lt. Col., 735 Steele St., Denver.

Connecticut

Chiota, Joseph A., Capt., 147 Terry Pl., Bridgeport.
Glike, Frederick P., Capt., 106 Columbus Ave., Meriden.
Krosnick, Morris Y., Capt., 105 Canner St., New Haven.

Delaware

Stern, Oscar N., Major, 1016 Rodney St., Wilmington.

District of Columbia

Barnes, Earl B., Capt., Gallinger Municipal Hosp., Washington.
Chase, Morris, Lt. Col., 3929 13th St. N.W., Washington.
DiFrancesco, Vincent J., Capt., 3356 Pa. Ave. S.E., Washington.
Hyman, Daniel, Capt., 5603 16th St. N.W., Washington.
Raffel, William, Capt., 4815 Georgia Ave. N.W., Washington.
Schreiber, John O., Major, Garfield Mem. Hosp., Washington.
Williamson, Ben K., Major, 1915 Kalorama Rd. N.W., Washington.

Florida

Bell, Francis E., Major, 415 Emmett St., Palatka.
Burch, John E., Capt., 2024 S.W. 19th St., Miami.
Feaster, Orin O., Lt. Col., 166 4th Ave. N.E., St. Petersburg.
Gable, Nonie W., Col., 706 Power & Light Bldg., St. Petersburg.
Levy, Morton, Capt., 521 Revere St., Orlando.
Weinstein, Abraham S., Capt., Box 527, Vets. Hosp., Lake City.

Georgia

Billinghurst, George A., Major, State Hosp., Milledgeville.
Garner, John P., Capt., 607 Med. Arts Bldg., Atlanta.
Holden, Howard T., Major, Rabun Gap.
Mann, Frank R. Jr., Major, McRae.

Idaho

Kaar, Richard C., Capt., Box 228, Burley.

Illinois

Abrahams, Benjamin, Capt., 7025 Sheridan St., Chicago.
Armalavage, Leon J., Major, 1819 Polk St., Chicago.
Aronoff, Joseph, Capt., Morton.
Baker, Philip M., Capt., 7802 Colfax Ave., Chicago.
Baylor, John E., Capt., 621 Waveland Ave., Chicago.
Benedek, Tibor, Lt. Col., 1706 E. 56th St., Chicago.
Carney, Thomas B., Major, 611 S. Tremont St., Kewanee.
Clark, John S. Jr., Capt., 1006 W. Stephenson, Freeport.
Cohan, Albert, Capt., 2724 Crystal St., Chicago.
Conner, James A., Major, 8913 Blackstone Ave., Chicago.
Cozad, Delos R., Capt., 500 Diversey Parkway, Chicago.
Cunningham, Glenn D., Major, 915 30th St., Rock Island.
Dean, Robert K., Capt., 400 W. Forrest Hill Ave., Peoria.
Fahlstrom, Stanley C. W., Col., 30 N. Michigan Ave., Chicago.
Foley, Charles J., Major, 535 Madison St., Waukegan.
Fraerman, Samuel H., 1st Lt., 628 Sheridan Rd., Chicago.
Garvy, Andrew C. Jr., Capt., 5842 Wayne Ave., Chicago.
Giltner, Otis B., Major, Sheffield.
Hammatt, Harold W., Capt., 547 W. Jackson Blvd., Chicago.
Harris, Garford R., Capt., 6549 S. Green St., Chicago.
Jana, Edward C., Capt., 4034 W. 21st Pl., Chicago.
Johnston, Kenneth P., Major, 27 Julian Pl., Elgin.
Kane, David S., Major, 1809 S. Central Park Ave., Chicago.
Lander, Herman B., Capt., 3922 W. 13th St., Chicago.
Leshin, Arne, Capt., 5474 Everett Ave., Chicago.
Levan, Arthur B., Capt., 3811 Pine Grove Ave., Chicago.
Logsdon, Robert E., Capt., Mount Sterling.
Lowy, Howard A., Major, 101 Elmridge Rd., Creve Coeur.
McEwen, Kenneth W., Capt., 7660 W. Monroe St., Forest Park.
Majarakis, James D., Major, 620 E. 81st St., Chicago.
Morgan, Jack A., Major, 750 S. State St., Elgin.
Nelson, Melvin J., Capt., 4331 W. Schubert Ave., Chicago.
O'Donnell, Frederick D., Capt., 1940 Thornwood Ave., Wilmette.
Ostrowski, Fabian S., 1st Lt., 273 Blackhawk Rd., Riverside.
Parker, Francis W., Capt., 303 E. Superior St., Chicago.
Rosenblum, Earl, Lt. Col., Cook County Hosp., Chicago.
Roth, John B., Capt., 324 Liberty St., Morris.
Sandler, William S., Major, 5252 Broadway, Chicago.
Shulruff, Harry I., Major, 1833 S. Millard Ave., Chicago.
Weir, John M., Capt., 132 F. W. Riverview, Decatur.
Zurfi, Clarence J., Lt. Col., 4132 N. Kedvale Ave., Chicago.

Indiana

Amos, Robert L., Major, 924 Lincoln Ave., New Castle.
Carbone, Joseph A., Capt., 131 E. 5th Ave., Gary.
Dieckman, Herbert S., 1st Lt., R.R. 3, Evansville.
Fisher, Kenneth B., Major, 634 Associates Bldg., South Bend.
Glackman, John C. Jr., Capt., Rockport.
Heinrich, Guenter E., Capt., Box 68, Ewing.
Kolanko, Leo A., Capt., 6104 Columbia Ave., Hammond.
Miller, Roland E., Capt., 114 E. Jackson St., Plymouth.
Pasterak, A. J., Capt., U. S. Vet. Adm. Fac., Indianapolis.
Sanderson, Richard J., Capt., Westville.

Iowa

Eller, Lancelot W., 1st Lt., Kanawha.
Heitzman, Paul O., Capt., 618 Med. Arts Bldg., Burlington.
Knott, Robert C., Major, 620 Davidson Bldg., Sioux City.
Long, Draper L., Capt., 1104 W. State, Mason City.
McMeans, Thomas W., Capt., 2811 Davenport Ave., Davenport.
Myers, Kermit W., Capt., Sheldon.
Riegelman, Ralph H., Major, 1201 Equitable Bldg., Des Moines.
Sharpe, Don C., Major, 1200 Main St., Dubuque.

Kansas

Brady, Charles S., 1st Lt., 837 Kansas Ave., Atchison.
Bux, Donald E., Capt., 607 S. Kansas, Columbus.
Davis, Christopher G., Major, 406 State Ave., Kansas City.
Randles, Leland P., Capt., 1001 Burke St., Fort Scott.
Saylor, Leslie L., 1st Lt., 407 Woodlawn, Topeka.
Sprong, Aaron A., Major, 112 S. Broadway, Sterling.
Williams, Ben C., Major, St. Francis.

Kentucky

Bolis, George F., Capt., 1012 Gloucester Ave., Middlesboro.
Combs, Lyndon F., Capt., P. O. Box 177, Hazard.
Davis, Howell J., Lt. Col., 115 E. 4th St., Owensboro.
Fortune, Carl H., Lt. Col., Rural Route 3, Lexington.
Hahs, Robert W., Major, La Center.
Medley, Lawrence H., Capt., 2428 Allen St., Owensboro.
Monroe, Robert F., Major, 1890 Richmond Dr., Louisville.
Wells, William C., Capt., Glasgow.

PHYSICIANS SEPARATED FROM SERVICE

Louisiana

Accardo, Nick J., Capt., Box 528, Patterson.
Goldman, Allan M., Capt., 1525 Joseph St., New Orleans.
Knighton, James E., Lt. Col., 921 Ontario St., Shreveport.
Patterson, McLeod, Major, Charity Hosp. of La., New Orleans.
Pepe, John L., Major, 630 3d St., Bogalusa.
Richardson, Samuel M. Jr., 1st Lt., 116 Homer Rd., Minden.
Stander, Alvin A., Major, 125 W. Landry St., Opelousas.

Maine

Brinkman, Harry, Capt., 47 Perham St., Farmington.
Gregory, Irving F., Capt., 255 Hammond St., Bangor.
McLean, Emory A., Capt., 29 Deering St., Portland.
Steele, Charles W., Lt. Col., 472 Main St., Lewiston.

Maryland

Graham, Richard W. Jr., Lt. Col., 3702 Greenway, Baltimore.
Greene, Lawrence W., Capt., 53 Calvert St., Annapolis.
Hamburger, Louis P. Jr., Capt., 100 McHenry Rd., Pikesville.
Linhardt, E. G., Capt., 3 Chesapeake Ave., Eastport, Annapolis.
Owen, John K., Major, Hosp. for Women, Baltimore.
Rosenfeld, Morris, Capt., 5805 Clover Rd., Baltimore.
Whedbee, James S. Jr., Capt., 911 W. Lake Ave., Baltimore.

Massachusetts

Ascher, David S., Major, 1657 Commonwealth Ave., Boston.
Barton, Walter E., Lt. Col., Worcester State Hosp., Worcester.
Des Chenes, Albert A., Capt., 72 Velise St., Fitchburg.
Dosik, Max, Capt., 24 St. Germain St., Boston.
Doyle, Richard J., Capt., 88½ Federal St., Salem.
Echlov, Theodore, Capt., 65 Bainbridge St., Roxbury.
Espinoza, David V., Capt., 628 Dudley St., Dorchester.
Frazee, John R., Capt., 25 Allendale Way, Dedham.
Jacobs, Herbert, Capt., 148 Woodlawn St., Springfield.
Jacobs, Maurice, Capt., 48 Mt. Everett St., Dorchester.
Kanski, Francis A., Capt., Mercy Hosp., Springfield.
Long, Norman G., Major, 14 Luce St., Lowell.
Maloney, John D., Lt. Col., Box C, Waverley.
Milden, Forrest, Capt., 42 Newcomb St., Haverhill.
Picariello, Americo, Capt., 295 Main St., Medford.
Silverman, Nathan, Capt., 301 Essex St., Lawrence.
Weiss, Samuel, Capt., 217 Harvard St., Dorchester.
Wilson, Franklin L., Capt., 35 Day Ave., Westfield.

Michigan

Agate, George H., Major, 2307 Vinewood Blvd., Ann Arbor.
Bryce, James W., Capt., 1814 Stone St., Saginaw.
Byrn, Robert W., Capt., 1078 Ferdon Rd., Ann Arbor.
Fenech, Harold B., Major, 10 Peterboro St., Detroit.
Giddings, Ralph R., Capt., Bloomington.
Huffman, Elston R., Capt., 135 Greendale West, Detroit.
Hyman, Samuel J., Capt., 27371 Michigan Ave., Inkster.
Kahn, Edgar A., Lt. Col., Univ. Hosp., Ann Arbor.
Kimberlin, Kenneth K. Jr., 1st Lt., 5005 Bedford Rd., Detroit.
Lynch, Vincent A., Capt., 1618 16th St., Wyandotte.
McCullum, Estel B., Capt., 8925 E. Jefferson, Detroit.
Mair, Harold U., Capt., 507 Notre Dame, Grosse Pointe.
Nigro, Norman D., Capt., 15820 Dexter Blvd., Detroit.
Rom, Jack, Capt., 17579 Cherrylawn, Detroit.
Sack, Anthony G., Capt., 8315 Apolline, Detroit.
Siegel, Daniel C., 1st Lt., 2762 Glendale Ave., Detroit.
Staatz, Dumont S., Capt., 3651 SU, Univ. of Mich., Ann Arbor.
Szlachetka, Vincent E., Capt., 2691 Cortland Ave., Detroit.
Wilkes, John B., Major, Grand Rapids.

Minnesota

Akre, Osmund H., Major, Clarkfield.
Benjamin, H. G., Major, 2811 Huntington Ave., Minneapolis.
Bergh, George S., Lt. Col., 2615 Park Ave., Minneapolis.
Graves, Richard B., Capt., 311 Pine St., Red Wing.
Hauge, Erling T., Lt. Col., 1817 Oliver Ave., Minneapolis.
Kreilkamp, Bernard L., Capt., 512 4th St. S.W., Rochester.
McKibbin, John P., Capt., 430 7th St. S.W., Rochester.
Meyer, Alfred C., Capt., % Mayo Found., Rochester.
Polan, Charles G., Major, 412 S.E. Walnut St., Minneapolis.
Rumpf, Carl W., Col., 326 7th St., Faribault.
Smith, Baxter A. Jr., Major, Univ. Hosp., Minneapolis.

Missouri

Boedecker, Roy V., Lt. Col., 8594 Riverview Blvd., St. Louis.
Bonanno, Louis J., Capt., St. Joseph's Hosp., Kansas City.
Hollingworth, Robert S., Major, 1052 S. Delaware, Springfield.
Klippen, Arthur J., Major, City Hosp., St. Louis.
Rosehill, David B., Capt., 906 Olive St., Room 411, St. Louis.
Tapper, Stephen M., Capt., 7541 Hiawatha, Richmond Heights.

Montana

Anderson, Murl O., Capt., Hardin.
Movius, Arthur J. Jr., Capt., 1136 N. 28th St., Billings.

Nebraska

Borgmeyer, Henry J., Capt., Dodge.
Deweese, Wilford J., Capt., 1727 Pepper Ave., Lincoln.
Krahl, John B., Major, 611 G St., David City.
Popelar, Melville V., Lt. Col., 1719 S. 16th St., Omaha.

New Hampshire

Batchelder, Walter E., Major, R.F.D. 2, Dover.
Bovaird, James E., Capt., S. Main St., Wolfeboro.
Levine, Harold D., Lt. Col., 10 S. Main St., Bristol.

New Jersey

Barolsky, Benjamin, Major, 306 Broadway, Paterson.
Brogan, Francis B., Capt., 234 E. 32d St., Paterson.
Brumbach, William K., Capt., 100 Little St., Belleville.
Buechle, Carl F., Capt., E. Orange Gen. Hosp., East Orange.
Conway, James V., Capt., 428 Elmor Ave., Elizabeth.
Einhorn, Samuel E., Major, 241 16th Ave., Newark.
Englehard, George E., Capt., 142 Seeley Ave., Arlington.
Fine, Sydney G., Capt., 868 Stuyvestant Ave., Trenton.
Gelb, Jerome, Major, 86 W. Alpine St., Newark.
Hochman, Alex, Capt., 260 Hamilton Ave., Paterson.
Husted, Gerald W., 1st Lt., 102 9th Ave., Haddon Heights.
McCreight, David W., Major, % N. J. State Hosp., Marlboro.
Nevius, John K. Jr., Capt., 921 Cedar Brook Rd., Plainfield.
Nussbaum, Herman, Major, 827 State St., Camden.
Prather, Charles G., Major, 260 Westwood Ave., Westwood.
Rinzler, Elliot, Capt., 211 Roseville Ave., Newark.
Spivack, Seymour E., Capt., 28 Trotter Lane, Elizabeth.
Wood, Earl L., Col., 225 Ballantine Parkway, Newark.
Woodman, Charles B., Capt., Holland Rd., Gladstone.

New Mexico

Koff, Salmon A., Major, Vet. Admin. Fac., Port Bayard.

New York

Abelson, Max M., Capt., Jewish Memorial Hosp., New York.
Alicandri, Bruno B., Capt., 1355 82d St., Brooklyn.
Allen, Lloyd F., Lt. Col., 44 S. Main St., Pittsford.
Alvarez, Lawrence J., Capt., 689 Franklin Ave., Brooklyn.
Andrews, Joseph T., Capt., Deaconess Hosp., Buffalo.
Benjamin, Zachary H., Capt., 41 W. 86th St., New York.
Bennett, Herman J., Capt., 41 W. 83d St., New York.
Berardi, Luke J., Major, 2 N. 8th Ave., Mount Vernon.
Berchenko, Frank, Major, 576 Eastern Parkway, Brooklyn.
Berkson, Robert S., Capt., 69 Brunswick Blvd., Buffalo.
Bivona, Charles J., Capt., 10 Arlington Pl., Newburgh.
Blair, James C., Capt., 158 W. Delevan Ave., Buffalo.
Bodkin, Edmund C., Capt., 1138 White Plains Rd., Bronx.
Bogle, John H., Major, 15 Clark St., Brooklyn.
Borne, Stanford, Capt., 233 W. 77th St., New York.
Boswell, Henry A., Capt., 112 Pinewoods Ave., Troy.
Bouton, Dale C., Capt., Welfare Hosp., New York.
Bowers, Frederick W., Major, 267 Oxford Rd., New Rochelle.
Boyd, James R., Col., 897 Sterling Pl., Brooklyn.
Brezing, Herman J., Capt., 64 Burling Lane, New Rochelle.
Brick, John J., Major, 36 W. End Ave., Binghamton.
Broadman, Sylvan A., Capt., 200 W. 70th St., New York.
Brown, Daniel N., Capt., 775 Park Ave., New York.
Brown, James E., Capt., Ogdensburg.
Burgeson, Paul A., Major, 44 Elm St., Warsaw.
Butman, Burton B., Capt., Mitchell Field, Long Island.
Cacciatore, Thomas J., Capt., 908 E. 95th St., Brooklyn.
Canter, Sidney, Capt., 2005 Vyse Ave., Bronx.
Carvalho, Milton A., Major, 9 Cray Ave., Binghamton.
Chapin, Willard J., Capt., 23 Lake St., Perry.
Chester, Benjamin J., Major, 563 Howard Ave., Brooklyn.
Cimmino, Vincent J., Capt., 324 E. 4th St., Mount Vernon.
Clemente, Frank G., Capt., 661 W. 180th St., New York.
Cliff, William M., Capt., 235 E. 22d St., New York.
Climenko, David R., Capt., 38 Euclid Ave., Delmar.
Cohen, Leon J., Capt., 1331 Rosedale Ave., Bronx.
Conway, William H., Capt., 77 Briarcliff Rd., Larchmont.
Coppola, Santo T., Capt., 60 E. Broadway, New York.
Cotton, Thomas S., Lt. Col., 18 Center St., Hornell.
Dain, Harvey J., Capt., 300 Riverside Dr., New York.
D'Arata, Edward J., Capt., 7324 11th Ave., Brooklyn.
Deutl, Rudolf F., Capt., 16 Sunnyside Rd., Scotia, Schenectady.
DeWitt, Virgil B., Capt., Chestnut St., New Paltz.
Doroszka, Vincent A., Capt., 220 E. Main St., Riverhead.
Doust, Alfred W., Major, 576 Delaware St., Syracuse.

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Dwinelle, Joseph H., Lt. Col., 8 Woodruff Pl., Augurn.
 Echlin, Francis A., Major, 555 Park Ave., New York.
 Eisenberg, Harold I., Major, 20 Plaza St., Brooklyn.
 Elitzik, Robert C., Capt., 2907 Kingsbridge Terr., New York.
 Falkenbury, Frank M., Capt., 41 Sherman Ave., Glens Falls.
 Felder, Seymour L., Capt., 2 Horatio St., New York.
 Findlay, Robert T., Lt. Col., 4960 Arlington Ave., Bronx.
 Fine, Philip, Capt., 85-45 151st St., Jamaica.
 Firestone, Frederick, Capt., 68-19 79th St., Middle Village, L. I.
 Fishman, Isidore F., Major, 1018 E. 163d St., New York.
 Fitzgerald, Thomas G., Lt. Col., East Greenbush.
 Fleming, James S., Capt., 72 Division St., Salamanca.
 Foregger, Richard, Capt., 55 W. 42d St., New York.
 Fox, Lester, Capt., 2300 Kings Highway, Brooklyn.
 Frank, David I., Capt., 35 E. 30th St., New York.
 Freed, Isidore, Capt., 5307 Roosevelt Ave., Woodside.
 French, Frank S., Capt., 1960 St. Paul St., Rochester.
 Frenkel, David, 1st Lt., 86 E. 49th St., Brooklyn.
 Fulton, Harry L., Capt., Bellevue Hosp., New York.
 Gamble, John J., Capt., 222 Lancaster St., Albany.
 Gelvin, Edward P., 1st Lt., 345 E. 77th St., New York.
 Gillette, Lee, Capt., Post Graduate Hosp., New York.
 Gilner, Abraham, Lt. Col., 1452 Leland Ave., Bronx.
 Glassman, Samuel, Capt., 66-70 E. 111th St., Manhattan.
 Gleeson, Thomas H., Major, 12 E. 86th St., New York.
 Glendening, Robert S., Capt., Maine.
 Gold, Barnett J., Capt., 2206 Valentine Ave., Bronx.
 Goldberg, Leon H., Major, 175 N. Broadway, Nyack.
 Goldberg, Nathan, 1st Lt., 1562 Ocean Ave., Brooklyn.
 Golden, Maurice A., Major, 92-05 Whitney Ave., Elmhurst, L. I.
 Goldstein, Kenneth, Major, 23 Claremont Ave., Buffalo.
 Goldstein, Philip, Major, 2001 Morris Ave., Bronx.
 Greenberg, Joseph S., Capt., 4621 15th Ave., Brooklyn.
 Greenberg, Milton M., Major, 4910 15th Ave., Brooklyn.
 Greenblatt, Bernard, Major, 312 E. 21st St., Brooklyn.
 Greene, Barnett A., Major, 8902 Avenue A, Brooklyn.
 Grob, David, Capt., 2789 Brighton St., Brooklyn.
 Grogan, Richard H., Lt. Col., St. Vincent's Hosp., New York.
 Grossman, Leo, Major, 1584 Lexington Ave., New York.
 Guerra, Wilfred, Capt., 1635 47th St., Brooklyn.
 Haas, Joseph, Col., 40 W. 86th St., New York.
 Hass, George M., Major, 315 E. 68th St., New York.
 Hamilton, Thomas P., Major, 111 E. 76th St., New York.
 Holland, J. E., Capt., 250 Beach 139th St., Belle Harbour, L. I.
 Horowitz, Max N., Capt., 2964 Williamsbridge Rd., Bronx.
 Horowitz, Samuel, Capt., 1414 Shakespeare Ave., Bronx.
 Hurewitz, Marvin, Capt., 4802 10th Ave., Brooklyn.
 Johnson, Norman P., Major, 239 N. 2d St., Olean.
 Kaplan, Gustave, Capt., 10 Monroe St., New York.
 Katz, Isadore H., Capt., 713 E. Genesee St., Syracuse.
 Keefe, John J., Capt., 8 Main St., Camillus.
 Klingman, W. O., Lt. Col., 199 Ft. Washington Ave., New York.
 Kroon, Harry C., Lt. Col., 944 Euclid Ave., Syracuse.
 Kurtin, Abner, Major, 320 Central Park West, New York.
 Lanzetta, Louis A., Capt., 312 E. 116th St., New York.
 LeFavor, Dean H., Capt., 619 Morgan Ave., Palmyra.
 Leone, Anthony J., Major, 206 Dryden Ct., Ithaca.
 Levin, Jack, Major, 45 E. Main St., Freehold.
 Locasto, Camillo B., Capt., 276 Linden St., Brooklyn.
 London, Irving, Capt., 300 Central Park West, New York.
 Long, John C. Jr., 1st Lt., 18 W. 70th St., New York.
 McAllister, Ferdinand F., Capt., 622 W. 168th St., New York.
 McGowan, Frank J., Col., 50 E. 77th St., New York.
 McKeeby, Raymond S., Capt., 84 Main St., Binghamton.
 Manning, Ephraim L., Capt., % U. S. Vet. Adm. Hosp., Bronx.
 March, Edgar J. II, Capt., 1487 South Ave., Rochester.
 Martin, William J. Jr., Capt., 379 Quail St., Albany.
 Mastrella, Angelo A., Capt., 619 Lake Ave., Rochester.
 Maureri, Joseph C., Capt., 25A Kings Park, Long Island.
 Maxwell, Edmund A., Capt., 409 State St., Carthage.
 Melamed, Martin E., Major, 431 Broad St., Oneida.
 Meloro, Anthony, Capt., 119 Robinson St., Binghamton.
 Mermell, Lester, Capt., 78 Watkins Ave., Middletown.
 Meshken, Jacob, Major, 10 Park Ave., New York.
 Meyers, Reuben R., Capt., 518 Ontario St., Buffalo.
 Miller, Alvah S., Major, 10 Arnold Park, Rochester.
 Minden, Joseph H., Capt., 123 Morsmere Ave., Yonkers.
 Mirken, Allen S., Capt., 1344 E. 10th St., Brooklyn.
 Moore, Maurice J. Jr., Capt., 638 W. 168th St., New York.
 Morrone, Ciacento C., Capt., 87 Dunwoodie St., Yonkers.
 Mulvihill, Daniel A., Major, 175-06 Devonshire Rd., Jamaica.
 Murphy, Leo J., Capt., 106 S. Clinton St., Olean.
 Nogin, Herbert, Capt., 1102 Clarkson Ave., Brooklyn.
 Norman, Abraham, Lt. Col., 600 E. 55th St., New York.

New York—Continued

O'Connor, John P., Capt., 128 Ocean Ave., Amityville, L. I.
 Ogorzaly, Stanley F., Major, 231 N. Broadway, Yonkers.
 Osborn, James W., Capt., 225 Marlborough Rd., Rochester.
 Panzarella, Joseph A., Capt., 1134 Glenmore Ave., Brooklyn.
 Papae, Norman, Major, 415 Ocean Parkway, Brooklyn.
 Papp, Sandor D., Major, 333 Wyoming St., Buffalo.
 Parks, George H., Capt., 511 E. 86th St., New York.
 Pruyn, Robert M., Capt., 224 Park Ave., Yonkers.
 Rancourt, Charles D., Major, 218 19th St., Watervliet.
 Rau, Stanley C., Capt., 30 Richmond Ave., Amityville.
 Reed, Theodore D., Lt. Col., 42 Park Ave., Amityville.
 Reeves, Charles D., Capt., 201 Scott St., Newark.
 Regan, Francis C., Capt., 182 Child Ave., Rochester.
 Ribando, Charles A., Capt., 764 74th St., Brooklyn.
 Richardson, Charles H. Jr., 1st Lt., Bellevue Hosp., New York.
 Richter, Max, Major, 250 E. 178th St., Bronx.
 Rider, T. L., Capt., Stop 20, Albany Schenectady W., Albany.
 Rifkin, Samuel, Capt., 1291 Eastern Parkway, Brooklyn.
 Ritterman, Henry, Capt., 117-06 225th St., St. Albans.
 Rochfeld, Morris, Capt., 1363 W. 6th St., Brooklyn.
 Rock, Julius, Major, 27 Stone Rd., Rochester.
 Rose, Oscar A., Capt., 235 E. 46th St., New York.
 Rose, Richard A., Major, 15 Stephenson Blvd., New Rochelle.
 Rosenberg, Jonas S., Capt., 300 W. 109th St., New York.
 Rosenberg, Morris, Capt., 1929 Davidson Ave., Bronx.
 Rosenthal, Quintin, Capt., Brook Lane, Peekskill.
 Rosner, Samuel, 1st Lt., 2102 Bronx Park E., New York.
 Rothenberg, Joseph G., Capt., 302 S. 1st Ave., Mount Vernon.
 Rothstein, Isadore, Major, 1495 Popham Ave., Bronx.
 Rubin, Herman, Lt. Col., 277 Eastern Parkway, Brooklyn.
 Sabini, Cecil F., Capt., 603 Jefferson St., Hoboken.
 Saunders, William, Capt., 385 2d St., Troy.
 Sawyer, Charles D., Capt., 625 3d St., Brooklyn.
 Schatken, Robert V., Capt., 233 E. 50th St., New York.
 Schintzius, William C., Major, Boonville.
 Schneider, Louis, Capt., 1515 Grand Concourse, New York.
 Schwartz, Morris, Capt., 8 Cliff St., Beacon.
 Schwartz, Samuel, Capt., 1925 University Ave., Bronx.
 Schweitzer, Martin, Capt., 991 Freeman St., New York.
 Scibetta, Charles T., Capt., 92 Fargo St., Buffalo.
 Scroggin, Frederick R., Capt., Polyclinic Hosp., New York.
 Seapy, Lewis F., Capt., 2041 Eucalyptus Ave., Long Beach.
 Seelinger, George F., Capt., 611 Concord Ave., Williston Park.
 Segal, Lester, Major, 239 Central Park West, New York.
 Seidman, Herman H., Major, 760 Hunts Point Ave., Bronx.
 Selkin, William, Capt., 2060 Mapes Ave., Bronx.
 Sharkey, William F., Capt., 17-44 149th St., Whitestone.
 Shapiro, Samuel D., Capt., 1295 Grand Concourse, Bronx.
 Single, Charles M., Capt., 82 E. Main St., Wolcott.
 Soehner, Bernard P., Major, 444 Magee Ave., Rochester.
 Spencer, Gordon A., Major, 54 Decker St., Buffalo.
 Spencer, Ralph F., Major, 555 Union St., Hudson.
 Spinelli, Vincent A., Major, 43-39 39th Pl., Sunnyside, L. I.
 Spitz, Leon J., Capt., 237 E. 20th St., New York.
 Spitzer, Jos. M., Lt. Col., 109-05 72d Ave., Forest Hills.
 Spitzer, Norman, Capt., 56 Hawthorne Ave., Yonkers.
 Spring, David, Capt., 14-22 122d, College Point.
 Steele, Frank E., Capt., 205 W. 138th St., New York.
 Stevens, Eldred J., Capt., 51 Main St., Hammondsport.
 Stevens, Ralph P., Capt., Oak Hill, Greene County.
 Steyaart, Charles L., Lt. Col., 101 Broad St., Lyons.
 Stork, Gerard J., Capt., 104-17 220th St., Queens Village, L. I.
 Terry, Richard N., Capt., 25 Indian Church Rd., Buffalo.
 Tichenor, Clifford J., Major, Crouse Irving Hosp., Syracuse.
 Toter, Nestor J., Capt., 635 E. 211th St., Bronx.
 Turano, William M., Major, 321 E. 200th St., Bronx.
 Walzer, Eugene H., Capt., 99 Clove Rd., New Rochelle.
 Weiner, Max, Capt., 214-02 Murdock Ave., Queens Vil.
 Wirth, Herman E., Major, 43-02 21st Ave., Astoria, L. I.
 Zuckerman, Herman C., Capt., 1714 Corona Park, Bronx.

North Carolina

Augustine, R. W., Capt., % N. C. Orthopedic Hosp., Gastonia.
 Brown, Ivan W. Jr., Capt., Duke Hosp., Durham.
 Cutchin, Joseph H. Jr., Capt., Box 202, Whitakers.
 Fales, Robert M., Capt., 311 S. 5th St., Wilmington.
 Helsabeck, Belmont A., Capt., Nissen Bldg., Winston-Salem.
 Kennedy, Leon T., Major, 827 Missen Bldg., Winston-Salem.
 Lebauer, Maurice L., Major, 1509 Madison Ave., Greensboro.
 Robertson, Lloyd H., Capt., Country Club, Salisbury.
 Salle, George F., Capt., Vanceboro.
 Sox, Carl C., Lt. Col., Kenly.
 Warwick, Hight C., Capt., 2320 Kirkpatrick Pl., Greensboro.
 Winstead, Maurice B., Major, 312 Harvey St., Washington.

PHYSICIANS SEPARATED FROM SERVICE

North Dakota

Beck, Charles J., Capt., 424 E. Brewster, Harvey.
Radl, Robert B., Lt. Col., 301 Avenue C West, Bismarck.

Ohio

Ameter, Russell K., 1st Lt., 509 Oakwood, Bryan.
Andrus, Willard B., Capt., 2454 Kinsington Rd., Columbus.
Bauhof, Ned F., Capt., 1838 E. 101st St., Cleveland.
Berschaidsky, Solomon, Capt., 410 Catherine St., Cincinnati.
Blaugrund, Charles, Capt., 4775 E. 86th St., Cleveland.
Bogue, Charles A., Capt., 276 Monroe St. N.W., Warren.
Bookwalter, Henry L., Capt., 35 N. Main St., Columbiana.
Brett, John D., Major, 10465 Carnegie Ave., Cleveland.
Bronson, Lewis H. Jr., Capt., Lakeside Hosp., Cleveland.
Brown, Benjamin S., Capt., Indian Creek Farm, Canfield.
Butner, C. O., Capt., Box A, Shiloh.
Caudill, Darrell C., Capt., 400 Moore St., Middletown.
Chappel, Merwin R., Major, Cor. Ohio & Watt Sts., Athens.
Clippinger, Conrad K., Capt., 1602 Grand Ave., Dayton.
Cocrel, William A., Capt., 809 Oak St., Wyoming.
Coddington, Oscar L., Capt., 978 Jaeger St., Columbus.
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Del Vecchio, James J., Major, Rayland.
Donald, John H., 1st Lt., R. R. 2, Ripley.
Dornheggen, John H., Capt., 2317 Grandview Ave., Cincinnati.
Dowell, Lloyd L., Capt., P. O. Box, 442, Navarre.
East, William J., Capt., 2717 Fulton St., Apt. 4, Toledo.
Fberle, William H., Capt., 4500 Park Ave., Ashtabula.
Epler, Deane C., Capt., 295 W. Hubbard Ave., Columbus.
Felst Korn, Karl H., Capt., 286 S. Main St., Marion.
Fitzgerald, George P. Jr., Capt., 1317 Garfield Ave., Springfield.
Folger, Glen K., Lt. Col., 2179 Delaware Dr., Cleveland.
Folin, John J., Capt., 249 E. Robinson Ave., Barberton.
Fowler, Evan C., Major, 437 N. 18th St., Sebring.
Garcia, Charles T., Capt., 3328 Euclid Ave., Cleveland.
Good, Charles F., Major, 11333 Hessler Rd., Cleveland.
Grogan, Francis R., Major, 126 Scioto St., Urbana.
Gunn, Herman M., Lt. Col., 104 E. Walnut St., Ashland.
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Hauss, John F., Capt., 623 N. Main St., Celina.
Hengen, Henry E., Capt., 559 Hazel St., Amherst.
Hoffman, Charles R., Capt., 899 Lexington Ave., Cincinnati.
Horton, Robert J. M., Capt., 3215 Oak Rd., Cleveland Heights.
Jacobs, Herbert M., Lt. Col., 3034 Walton Ave., Cleveland.
Johnson, James B., Capt., 1350 W. 6th Ave., Columbus.
Keller, Bayard M., Capt., 1922 2d St., Cuyahoga Falls.
Kelly, Fred R., Lt. Col., 2010 E. 102d St., Cleveland.
King, Thomas A., Capt., 1610 Brainerd Ave., Cleveland.
Klopper, Edward G., Capt., The Cleveland Clinic, Cleveland.
Light, Theodore L., Capt., 2670 Salem Ave., Dayton.
Loeb, William J., Major, 12805 Cedar Rd., Cleveland Heights.
Lotzoff, Harold A., Capt., 211 S. Woodlawn St., Lima.
Lulenski, Chester R., Capt., 1862 E. 101st St., Cleveland.
McWilliam, John M., Capt., 2846 Inwood Dr., Toledo.
Maglio, Gerard C., Capt., 44 Barker Ave., White Plains.
Meckstroth, Paul G., Major, New Knoxville.
Mills, James F., Capt., 6341 Beechmont Ave., Cincinnati.
Mowry, John H., Capt., 401 Jackson St., Conneaut.
Myers, Robert D., Capt., 915 Welton Ave., Columbus.
Neff, Garnet E., Capt., 3033 N. Hill Rd., Portsmouth.
Pinnell, Earl E., Capt., 21 S. Pleasant Ave., Osborn.
Rian, Carlos D., Capt., 738 Rotch Ave. N.E., Massillon.
Root, Harold E., Capt., 214 Southwest St., Bellevue.
Sebastian, Charles A., Capt., 2085 Harrison Ave., Cincinnati.
Singer, Merle K., Capt., 771½ N. Main St., Akron.
Suttle, Robert C., Capt., 1709 Grand Ave., Toledo.
Wertheimer, Lee C., Capt., 515 Maxwell Ave., Cincinnati.
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Oklahoma

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Oregon

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Robb, Marvin J., Capt., 151 S. 6th St., Hillsboro.
Scales, Kenneth J., Capt., 3311 S.W. 10th St., Portland.
Skelly, Lee C., Major, 2226 N.W. Hoyt St., Portland.
Warrington, William R., Major, Univ. of Oregon, Portland.

Pennsylvania

Allen, Robert E., Col., 38 W. 3d St., Mount Carmel.
Axelrod, Bernard M., Capt., 1700 N. 57th St., Philadelphia.
Bailey, Frank R., Lt. Col., 209 Tennyson Ave., Pittsburgh.
Bealor, John A., Capt., % Hershey Hospital, Hershey.
Bello, Carmen T., Capt., 2036 S. 21st St., Philadelphia.
Biddle, John E., Capt., 212 Main St., Watsontown.
Biggins, James A., Capt., 420 N. Walnut St., Sharpsville.
Biskup, George E., Capt., 730 Main St., Mount Pleasant.
Blumberg, L. D., Lt. Col., Drake Hotel, 1512 Spruce, Philadel.
Boyer, George S., Capt., 318 W. Packer Ave., Bethlehem.
Braden, Frank R. Jr., Major, 1616 State Ave., Coraopolis.
Bretherick, Bernard S., Capt., Roulette.
Brohm, Charles G., Capt., Hawthorne.
Brown, Herman, Capt., 2201 N. 33d St., Philadelphia.
Browne, William C., Capt., Kinzua.
Bush, Leonard F., Lt. Col., Danville.
Buttermore, R. M., Major, 37 N. Bryant, Bellevue, Pittsburgh.
Cathcart, Hugh, Capt., Presbyterian Hosp., Philadelphia.
Ceraso, Louis C., Capt., 1721 5th Ave., Arnold.
Christman, Albert H., Major, 8 E. 5th St., Emporium.
Cohen, Merton E., Capt., 1314 Northhampton St., Easton.
Cooper, Franklin B., Lt. Col., 701 Allegheny Ave., Oakmont.
Cotton, Delmar C., Capt., 3403 Quay St., McKeesport.
Cowan, Thomas H., Major, 328 S. Camac St., Philadelphia.
Cramer, Earl D., Major, R. D. 2, Latrobe.
Di Stefano, Grimaldo C., Capt., 1302 Porter St., Philadelphia.
Donaldson, J. S., Major, Hawthorne Rd., Fox Chapel Borough, Pittsburgh.
Dutlinger, Robert P., 1st Lt., 18 Pennsylvania Ave., Mt. Union.
Echenberg, Max, Capt., 809 Chestnut St., Lebanon.
Etter, Lewis E., Major, Warrendale.
Evans, Harold H., Major, 402 Chestnut St., Berwick.
Everhart, Wilson C., Capt., Children's Hosp., Pittsburgh.
Fegley, Nathan A., Capt., 311 E. Main St., Schuylkill, Haven.
Fitts, William T. Jr., Capt., Univ. Pa. Hosp., Philadelphia.
Geyer, Harry M. Jr., Major, 166 Longue Vue Dr., Mt. Lebanon.
Gladney, James F. Jr., Major, Homer.
Gleason, Philip M., Major, 4111 Walnut St., Philadelphia.
Glinksy, George C., Major, Pa. State San., Hamburg.
Harris, Maurice N., Capt., 133 Carlisle St., Hanover.
Harrison, Milton, Major, 5118 N. Broad St., Philadelphia.
Heid, George J. Jr., Capt., Reading Hosp., Reading.
Helwig, Frederick G., Capt., 102 S. Madison St., Allentown.
Herbert, Michael J., Capt., 449 Sunbury St., Minersville.
Hollingsworth, John M., Capt., 23 Myrtle St., Girard.
Hutchison, Henry E., Major, 1101 Locust St., McKeesport.
Impink, Robert R., Lt. Col., Shillington.
Ingham, Albert J., Major, 315 W. Main St., Titusville.
Janjigian, Edward R., Major, Danville State Hosp., Danville.
Johnson, Benjamin H. Jr., Major, Robert Packer Hosp., Sayre.
Kabakjian, Ramond, Capt., 82 N. Lansdowne Ave., Lansdowne.
Kannapel, Allen R., Capt., 717 N. 1st St., Lehighton.
Kasser, Max D., Capt., 2800 W. Master St., Philadelphia.
Katz, Samuel H., Capt., 5811 Chester Ave., Philadelphia.
Krohn, Harold A., Major, 1330 Oak St., Lebanon.
Lang, H. B., Capt., 403 Pasadena Dr., Fox Chapel, Pittsburgh.
Laughlin, Robert M., Major, 513 Lorenz Ave., Pittsburgh.
Lavin, Frank C., Capt., 155 S. Main Ave., Scranton.
Lawlor, John M., Capt., 2314 W. Harold St., Philadelphia.
Leibold, Robert W., Capt., 225 Waldorf St., Pittsburgh.
Leinbach, Harvey D. Jr., Capt., 1101 Evergreen Rd., Reading.
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McCartney, George A., Capt., Box A, Seward.
McHugh, Joseph W. Jr., Major, 145 Fayette St., Johnstown.
McMahan, Joseph N., Major, 19 Laurel Ave., Washington.
McNabb, James R., Capt., Burnham.
McNeal, Samuel W., Capt., 741 Chestnut St., Columbia.
Malcolm, Donald C., Capt., Alexandria.
Maylath, Florian R., Capt., 508 E. 4th St., Bethlehem.
Maunz, Daniel H., Lt. Col., Thomas Rd., Bradford.
Mercer, Theodore L., Capt., 214 Pennsylvania Ave., Avondale.
Miller, Elmer E., Capt., Helfam.
Miller, Ira C., Col., 2711 Logan St., Camp Hills.
Mitrani, Jacques H., Major, 229 W. Front St., Berwick.
Mitterling, Robert C., Capt., 531 Baltimore Ave., Philadelphia.
Myers, William C., Capt., 1239 Monterey St. N.W., Pittsburgh.
Novak, John G., Major, 112 Stratford Ave., Pittsburgh.
Pitchford, W. N., Major, 2736 Espy Ave., Dormont, Pittsburgh.
Porter, Edgar L., Major, Chester City Hosp., Embreeville.
Prescott, W. D., Capt., 193 S. Tulpehocken St., Pine Grove.
Rhoads, John P., Capt., 145 Baltimore St., Gettysburg.
Rizika, Stuart D., Capt., 863 S. George St., York.
Robertson, Harold F., Lt. Col., 246 Rockglen Rd., Penn Wynnec.
Rubin, Jerome J., Capt., 1332 Devereaux Ave., Philadelphia.

PHYSICIANS SEPARATED FROM SERVICE

Pennsylvania—Continued

Sandhaus, Julius L., Major, 426 W. King St., Lancaster.
Sarraff, George J., Capt., 3701 Penn Ave., Pittsburgh.
Saul, Theodore J., 1st Lt., Centre St., Dushere.
Schultz, Edward J., Major, Claysburg.
Simpson, Robert C., Lt. Col., Box 325, Ridgway.
Sowers, John W., Capt., Fayetteville.
Staskiel, Louis J. Jr., Capt., 53 Coal St., Glen Lyon.
Steele, Frederick H., Major, Taylor Highlands, Huntingdon.
Steele, Ralph E., Capt., RFD 1, Carlisle.
Stevenson, Alfred S., Major, Oakdale.
Stoner, Robert R. Jr., Lt. Col., York Springs.
Strini, Joseph F., Capt., 1101 Church Ave., McKees Rocks.
Stutzman, C. M. Jr., Capt., 308 E. Central, S. Williamsport.
Swingle, James W., Capt., RFD 1, Box 186-A, Lake Ariel.
Taksa, David S., Capt., 308 2d St., Elizabeth.
Tobias, Carl A., Capt., 509 Main St., Forest City.
Turnblacer, Charles B., Major, 317 W. Penna St., Butler.
Uhde, George I., Major, Longwood Gardens, Kennett Square.
Vesely, John A., Capt., RFD 1, Fayette City.
Volkwein, Frederick W. W., Capt., 532 Station St., Bridgeville.
Williams, Donald D., Capt., 551 W. 26th St., Erie.
Williams, Herman J., Capt., 439 N. 11th St., Reading.
Wymer, Ralph M., Capt., Mercy Hosp., Pittsburgh.

Rhode Island

Clagett, Augustus H. Jr., Lt. Col., Rhode Is. Hosp., Providence.
Hoffman, Arthur O., Capt., 380 Lloyd Ave., Providence.
Maynard, Jean M., Capt., 42 Curson St., West Warwick.

South Carolina

Allgood, James E., Capt., Inman.
Brooks, Thomas G., Lt. Col., Highland Park Dr., Aiken.
Lacey, William H., Capt., City Hall, Georgetown.
Plotkin, Oscar M., Major, 9 Cedar Terrace, RFD 4, Columbia.
Sweatman, Carl A., Capt., 137 Harden St., Columbia.

Tennessee

Chamberlain, Douglas, Capt., 811 W. Brow Rd., Lookout Mt.
Redmon, John J., Capt., John Gaston Hosp, Memphis.
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Texas

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Cohen, Raymond, Major, 2204 Bellefontaine, Houston.
Cuen, Mario J., 1st Lt., 1122 Montana St., El Paso.
French, Cecil M., Capt., Methodist Hosp., Dallas.
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Gillespie, Charles H., Capt., Scott & White Clinic, Temple.
Griffin, Frank S. Jr., Major, Liberty.
Guinn, James E., Capt., 1063 E. Terrell Ave., Fort Worth.
Hawker, LaVerne J., Major, 195 Alston, Fort Worth.
Heger, Frank F., Major, Shiner.
Kaufman, Herschel J., Capt., 3618 5th St., Port Arthur.
Malakoff, Morris E., Capt., O.O. Box 552, Laredo.
Moser, Emil R., Major, 109 N. Main St., Gladewater.
Pierson, Marcus A., Major, 1009 N. Galveston.
Rowe, Robert J. Jr., Capt., Kaufman.
Scales, John G., Capt., 328 W. Colorado St., Dallas.
Shacklett, Ernest D. Jr., Capt., 808 E. Quincy St., San Antonio.
Shapiro, Isadore A., Major, 17 G Inf. Post, Fort Sam Houston.
Still, Oscar W., Major, 6621 Lakewood Blvd., Dallas.
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Utah

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Virginia

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Brantly, Edgar C. Jr., Capt., 124 Lady Astor St., Danville.
Burke, James O., Major, 204 E. Franklin St., Richmond.
Casscells, Samuel W., 1st Lt., 34th St., Norfolk.
Damron, Harold B., Lt. Col., 508 Park St., Bristol.
Davis, Charles F. Jr., Lt. Col., 2831 Melrose Ave., Roanoke.
Dunn, Edward T. Jr., Capt., 310 Ridgeway St., Clifton Forge.
Harkrader, Charles J. Jr., Capt., 115 Solar St., Bristol.
Marsella, John J., Capt., 1200 E. Marshall St., Richmond.
Paine, Wilmer H., Major, 112 3d St. N.W., Charlottesville.
Pinckney, Morton M., Lt. Col., 3104 Monument Ave., Richmond.
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Staley, Joseph S., Major, Marion.
Stone, Carey A. Jr., Capt., 411 E. Maryland Ave., Crewe.
Tyler, Gilmar R., Major, Med. Coll. of Va., Richmond.
Zack, Frank A., Capt., 328 56th St., Newport News.

Washington

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Compton, David W., 1st Lt., Vashon, Kind Co.
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Drewelow, Kenneth R., Capt., Cort Rd., Kirkland.
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Forman, Burnett B., Major, Govey Bldg., Shelton.
Harriage, Robert R., Major, 224 Spruce Ave., Montesano.
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Hines, Harold C., Capt., 716 W. Yakima St., Pasco.
Larson, Charles P., Lt. Col., Tacoma GH, Tacoma.
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Schoolnik, Max L., Capt., 550 Stimson Bldg., Seattle.
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Way, John D., 1st Lt., 731 Alder, Seattle.
Wood, Quentin Lee, Capt., 2512 Roanoke, Seattle.

Wisconsin

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Black, Samuel B., Capt., 7331 Wellauer Dr., Wauwatosa.
Bunts, Robert C., Major, Wisconsin Gen. Hosp., Madison.
Conen, Warren J., Major, 908 N. 12th St., Milwaukee.
Feiman, Lawrence H., Capt., 2518 N. Stowell Ave., Milwaukee.
Flannery, John V., Capt., 204 Franklin St., Wausau.
Hartman, Alexander S., Capt., 622 W. Mitchell St., Milwaukee.
Hitz, John B., Lt. Col., 2908 N. Stowell Ave., Milwaukee.
Karberg, Richard J., Capt., 2108 Rowley Ave., Madison.
Konz, Stephen A., Capt., 50 Bellaire Ct., Appleton.
Leininger, Alfred T., Capt., Milwaukee.
Milchen, Carl, Capt., Prairie du Chien.
Nowack, Lewis W., Lt. Col., Watertown.
Poindexter, Marlin H. Jr., Capt., Mil. Child. Hosp., Milwaukee.
Olsen, Leonard C. J., Capt., Box 25, Delafield.
Qualls, Charles L., Capt., 146 Oak Grove St., Juneau.
Rechltitz, Ervin T., Lt. Col., Miltown.
Sand, Harry H., Capt., 2453 N. 17th St., Milwaukee.
Schlomovitz, Harry H., Major, 3d & LaSalle St., Barron.
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Simenson, Raymond S., Capt., Valders.
Snodgrass, Herbert M., Capt., 716 W. Dayton St., Madison.
Solberg, Marvin E., Capt., 631 N. Church St., Richland Center.
Vedder, Charles A., Major, 716 Highland Ave., Marshfield.
Vetter, Edward W., Capt., Brandon.
Watry, Theodore D., Capt., 1950 W. Nash, Milwaukee.
Weisfeldt, Simon C., Capt., 3036 N. 62d St., Milwaukee.
Wilets, Jack B., Capt., 3488 N. Murray Ave., Milwaukee.
Winkler, Raymond J., Lt. Col., Hilbert.
Wiusauer, Henry J., Capt., 229 Orchard Rd., Kohler.

Wyoming

Giovale, Silvio J., Major, Rock Spring.

Hawaii

Chang, Hon C., Capt., Lihue, Kauai.
Chunming, Archie, Major, 164 S. Vineyard St., Honolulu.
Depp, Donald S., Capt., Waipahu Hosp., Waipahu, Oahu.
Kainuma, Richard T., Capt., Waialua, Oahu.
Kawasaki, Isaac A., Major, 307 N. Kukui St., Honolulu.
Luke, Leslie N. Y., Capt., 1189 Bethel St., Honolulu.
Stilson, Homer O., Major, Waianae.
Stitt, Albert, Capt.
Tong, Fook H., Major, 1927 Coyne Ave., Honolulu.

Puerto Rico

Jimenez, Roberto J., Major, 97 Ponce de Leon Ave., Santurce.
Matta, Enrique L. J., Capt., Fajardo.
Nieves-Colon Juan de la Cruz, Capt., 33 General Contreras St., Cayey.
Oms, Luis R., Major, Municipal Hosp., Humacao.

CHANGES

Cable, Wilbur G., Capt., Benedict.
Girod, Charles I., 1st Lt., Cambridge.
Rosenthal, Arthur D., Capt., Vt. Adm. Facility, Lyons.

Foregoing officers have not been relieved from active duty.

MEDICAL OFFICERS RELEASED BY THE NAVY

The figures in the Personnel Division of the Bureau of Medicine and Surgery indicate that 1,259 medical officers have been released and their records closed in this bureau, and information from the Bureau of Naval Personnel indicates that 1,635 medical officers are under orders for release from active duty, making a total of 2,894 separated or under orders for separation as of Dec. 1, 1945. The critical score effective Jan. 1, 1946 makes 5,583 medical officers eligible for separation. This number does not include medical officers released by reason of hardship, limited shore duty or affiliation with teaching institutions and hospitals.

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Callaway, Raymond R.....Birmingham
Gaillard, Samuel S.....Mobile
Howard, John M.....Autaugaville
Littlejohn, Wilmot S.....Birmingham
Meeker, William R.....Mobile
Parsons, William C.....Birmingham
Rumpanos, Socrates N.....Mobile
Smith, Gordon R.....Ozark
Thompson, Clyde T.....Wilson Dam

Arizona

Piepergerdes, Clarence C.....Bisbee

Arkansas

Barrett, Edward R.....Jonesboro
Calcote, Royal J.....Little Rock
Krock, Frederick H.....Ft. Smith
Stigler, Stephen L.....Little Rock
Stone, Wayne B.....Waldenburg

California

Adams, Robert M.....San Diego
Albertson, Henry K.....San Diego
Brown, Dewey F.....Redwood City
Burke, George W.....San Francisco
Cardwell, John L.....Piedmont (Oakland)
Chambers, Jack V.....Sacramento
Costolow, William E.....Los Angeles
Davis, John P.....Santa Ana
Ellmore, Lewis F.....Los Angeles
Emerson, Charles V. A.....Los Angeles
Ewing, John P.....Los Angeles
Gilman, Philip K. Sr.....San Francisco
Goodcell, Ross A.....Los Angeles
Green, Marion M.....Stockton
Holman, Emile F.....San Francisco
Holmes, Olin M.....San Mateo
Johnson, Clark M.....San Francisco
Jones, George W.....Pomona
Kaplan, Harry E.....Long Beach
Lauer, Calvin A.....Long Beach
Leef, Edward E.....San Francisco
Lees, Floyd E.....Hanford
McDowell, Arthur J.....San Francisco
McElhinney, Philip P. B.....Bellflower
Mansfield, Raymond J.....San Francisco
Markthaler, Edward L.....Santa Barbara
Marshall, James M.....San Marino
Parker, Leon O.....San Francisco
Patterson, John K.....Santa Barbara
Pendergrass, Clayton I.....Clovis
Pentz, Clarence R.....Long Beach
Pressman, Joel J.....Los Angeles
Rapaport, Walter.....Ontario
Reeder, Charles W.....Long Beach
Reynolds, Lloyd R.....San Francisco
Rhind, Ralph M.....Hermosa Beach
Rogers, William L.....San Francisco
Rusche, Carl F.....Hollywood
Russell, William M.....San Diego
Sherman, Samuel R.....San Francisco
Simon, Julius.....Hollywood
Sokolow, Maurice.....San Francisco
Stanley, Leo L.....San Rafael
Steele, Edson H.....Los Angeles
Stewart, John E.....Alameda
Stofer, Dar Delos.....San Diego

Colorado

Barnard, Hamilton I.....Denver
Eckhardt, George C.....Boulder
Orr, Joseph K.....Craig
Thompson, John W.....Pueblo
Weeks, Paul R.....Denver

Connecticut

Baker, Clifford C.....Hartford
Baron, Shirley H.....New London
Bidgood, Charles Y.....Hartford
Brown, Norton S.....Newton
Crampton, Clair B.....Middletown
Crosby, Edward H.....Hartford
Eckelberry, Niel E.....Georgetown
Green, William F.....Newton
Kornblut, Alfred.....Bridgeport
Lampson, Rutledge S.....Hartford
Lewicki, Edward S.....Waterbury
Mayo, Elliott R.....Waterbury
Moran, James P.....New London
Nesbitt, Samuel.....New Haven
Noble, Philip C.....Missoula
Roberts, Frederick W.....Hamden
Stevens, Marvin A.....Harwinton
Ward, Robert H.....Darien
Wilson, George C.....Wallingford

Delaware

Farr, Lee E.....Wilmington
Martin, John P.....Camden
Squires, Millard F. Jr.....Richardson Park
Thomison, Jamuel J. Jr.....Wilmington

District of Columbia

Cohen, Roger S.....Washington
Grove, Pembroke T.....Washington
Hopkins, Gerald A.....Washington
Kellerman, Edgar A. P... Washington
Kreuzburg, Harvey F.....Washington

Florida

Andrews, Edwin H.....Gainesville
Bedell, Sullivan G.....Jacksonville
Bradley, James A.....Petersburg
Cline, Abe.....Jacksonville
Gemmell, Chalmers L.....Pensacola
Hebard, Charles E.....St. Petersburg
Jack, Ralph W.....Miami Beach
Kauders, Ferdinand H.....Miami Beach
Martin, Douglas D.....Tampa
Reese, Homer A.....Miami
Richards, Ferdinand.....Jacksonville
Riley, Julian G.....Jacksonville
Rudolph, Council C.....Petersburg
Swift, Edwin C.....Jacksonville
Vallotton, Joseph R.....Dayton Beach
Weiland, Arthur H.....Coral Gables
Williams, William L.....Pensacola
Wright, Claude B.....St. Petersburg

Idaho

Mack, Quentin W.....Boise

Illinois

Abrams, Jack S.....Chicago
Drennan, George L.....Jacksonville
Holm, Alf J.....Chicago
Imborski, Stanley J.....Chicago
Westenberger, Lorenz H.....Chicago
Zieman, Stephen A.....Chicago

Indiana

Baxter, Neal E.....Bloomington
Beard, Paul H.....Indianapolis
Cohen, Bernard W.....Indianapolis
Duemling, Arnold H.....Fort Wayne
Rhamy, Arthur P.....Wabash
Rust, Byron K.....Indianapolis
Scott, Harry V.....Fort Wayne
Slominski, Harry H.....South Bend
Waite, Richard R.....Lafayette
Yegerlehner, Roscoe S.....Kentland

Iowa

Ady, Albert E.....Marengo
Anderson, Stanley N.....Onawa
Bunch, Harold M.....Shenandoah
Campbell, Walter V.....Oskaloosa
Edwards, Sydney K.....Red Oak
Fullgrabe, Emil Albert.....Indianola
George Everett M.....Des Moines
Gilfillan, George W.....Bloomfield
James, Audra D.....Des Moines
Jongewaard, Albert J.....Jefferson
Leinbach, Samuel P.....Belmond
Lohr, Phillips E.....Churchdan
McGivra, Raymond I... Guthrie Center
McKitterick, John C.....Burlington
Paige, Ralph T.....La Porte City
Sorenson, Aral C.....Davenport
Werthmann, Paul A.....Anthon

Kansas

Ashley, Byron J.....Topeka
Byers, Philip L.....Kansas City
Caldwell, George M.....Manhattan
Parmley, Charles C.....Hutchinson
Porter, John M.....Concordia
Royer, Charles A.....Coffeyville
Royse, George T.....Coffeyville
Speer, Frederic A.....Kansas City
Speer, Leland N.....Kansas City

Kentucky

Adair, Walter M.....Russellville
Akin, William E. Jr.....Paintsville
Bowen, Joseph A.....Louisville
Fuller, James T.....Mayfield
Goldberg, Harry.....Mathews
Keller, William K.....Louisville
McClure, George M., Jr.....Danville
Overstreet, Samuel A.....Louisville

Maine

Apollonio, Howard L.....Camden
Cuneo, Kenneth J.....Kennebunk
Hanlon, Francis W.....Portland
Hinman, Haviilah E.....Orono
Smith, Kenneth E.....Portland

Maryland

Allison, Robert H.....Baltimore
Bowers, John Z.....Baltimore
Broyles, Edwin N.....Baltimore
Goldsmith, Harry.....Baltimore
Goodman, Jerome E.....Baltimore
Hellman, Louis M.....Baltimore
O'Donovan, Charles.....Baltimore
Schlesinger, George G.....Baltimore
Williamson, Edgar P. II.....Catonsville
Wilson, Edward C. Jr.....Edgewater

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM
ACTIVE DUTY

Massachusetts

Abrams, Archie A.....Brookline
Belcher, Charles D., J.....Winthrop
Bigelow, Robert B.....Milton
Boguniecki, Stanley J.....Westfield
Carr, Frank B.....Worcester
Chamberlin, Harold A.....Newtonville
Cordray, David P.....Boston
Cozza, Lawrence F.....Sommerville
Duncombe, Alfred L.....Brockton
Dunphy, Edwin B.....Chestnut Hill
Farnsworth, Dana L.....Williamstown
Faulkner, James Morrison.....Brookline
Fay, John H.....Boston
Forbes, Wilfred W.....Gloucester
Fox, Samuel.....Holyoke
Harris, Herbert I.....Westport Point
Helgesson, Uno H.....Longmeadow
Hilton, Philip F.....Leominster
Jacobs, Lee D.....Mattapan
Johnson, Charles I.....Boston
Kitts, Albert W.....Boston
Kontoff, Henry A.....Newton Center
Kuchar, Benjamin E.....Brighton
Kunian, David.....Lynn
Lamphier, James A.....Newton
Levenson, Walter S.....Brighton
Miller, Julius Y.....Chelsea
Olson, Joseph M.....Westboro
Osterheld, Roger G.....Concord
Pratt, Theodore C.....Boston
Roberson, Tracey L.....Ware
Schirmer, Adelbert.....Roslindale
Sullivan, Gerald J.....Worcester
Sullivan, William J.....Milton
Thornton, John J.....Boston
Volk, Ralph.....Brookline

Michigan

Adams, Frank A.....Grand Rapids
Blaine, Max.....Detroit
Campbell, Charles A.....Detroit
Dimitroff, Sim P.....Ann Arbor
Fandrich, Theodore S.....Detroit
Grimaldi, Gregory J.....Detroit
Hilt, Laurence M.....Grand Rapids
Hoogerhyde, Jack.....Grand Rapids
Johnson, Lester J.....Ann Arbor
Olsen, Richard E.....Pontiac
Ottaway, John P.....Grosse Pt. Farms
Pfeiffer, Carl C.....Detroit
Reagan, Robert E.....Benton Harbor
Rector, Edgar M.....Ann Arbor
Richter, Harry J.....Saginaw
Williams, Richard J.....Monroe
Wilson, Merton C.....Detroit

Minnesota

Bagley, Charles M.....Duluth
Becker, Sidney F.....Minneapolis
Bird, Lee C.....Minneapolis
Borowicz, Leonard A.....Minneapolis
MaGath, Thomas B.....Rochester
Mayne, Roy M.....Duluth
Miller, Hugo E.....Minneapolis
Naslund, Ames W.....Minneapolis
Nielsen, Alvin M.....Northfield
Peterson, John H.....Duluth
Rosenholtz, Burton.....St. Paul
Rudie, Peter S.....Duluth
Schulze, William M.....Minneapolis
Shimonek, Stewart W.....St. Paul
Steinberg, Charles L.....St. Paul
Sweetster, Horatio B. Jr.....Minneapolis
Sybilrud, Hjalmer W.....Bricelyn
Tibbetts, Mark H.....Duluth
Vogel, Howard A. L.....New Ulm
Walter, Clarence W.....St. Paul
Wheeler, Daniel W.....Duluth

Mississippi

Coffey, John D. Jr.....Vicksburg
Fiegel, Samuel A.....Sturgis
Howard, Homer L.....Winona
Jones, Isaac H.....Meridian
Lynch, Robert H. F.....Marrs
Stallworth, William L.....Columbus
Whittington, Homer A.....Natchez

Montana

Bennett, Arthur A.....Roundup
Delaney, James R.....Kalispell
Hawkins, Thomas L.....Helena
Key, Roy Whitfield.....Missoula
Noble, Philip C.....Missoula
Shaw, John A.....Billings

Nebraska

Clarke, Harvey L. Jr.....North Platte
Glazier, McCleery.....Broken Bow
Iwersen, Frank J.....Omaha
McLaughlin, Charles W., Jr.....Omaha
Royer, Howard.....Grand Island
Underwood, George R.....Lincoln
Waggoner, Charles M.....Omaha

New Hampshire

Hand, Francis J.....Epping
Hunter, Ralph W.....Hanover
McCarthy, Joseph M.....Concord

New Mexico

Johnson, Lionel W.....Roswell
Lundgren, Rupert W.....Las Cruces
Poppen, Mayo J.....Raton
Wilson, Robert B.....Albuquerque

New York

Acken, Henry S. Jr.....Brooklyn
Anopol, George.....Yonkers
Blaisdell, Harold A.....Jamestown
Blum, Lester.....New York
Boggs, Robert.....New York
Callahan, Edward T.....New York
Carter, James D.....New York
Culver, Clair H.....Falconer
Curran, Frank J.....New York
Donehue, Francis M.....New York
Duryea, Garrett De Nyse.....Glen Cove
Ewing, James H.....New York
Fackler, Charles L.....New York
Gerstley, Manfred J.....Lynbrook
Giustra, Frank X.....Brooklyn
Harris, Harold J.....Essex County
Hazzard, Charles T.....New York
Jaeger, Gern W.....Niagara Falls
Jameson, Edwin M.....Saranac Lake
Keenan, Robert J. A.....Bronx
Kees, Walter T.....New York
Lauterbach, Chester H.....Rochester
La Vine, Joseph J.....Baldwin
MacRobert, Russell G.....Larchmont
McCabe, Edward J.....New York
Miner, Theodore R.....Brooklyn
Murphy, Wallace B.....New York
Nahon, Joseph R.....New York
Napp, Emol E.....New York
Noonan, James E.....Yonkers
Pelow, William E.....Syracuse
Pendleton, Raymond K.....Brooklyn
Short, James J.....Forest Hills, L. I.
Siegartel, Morris.....Brooklyn
Tripler, Samuel.....New York
Trombetta, Alessandro.....Buffalo
Twaddell, Donald N.....Scarsdale
Weinstock, Harry I.....New York
Weitzen, Delmo L.....Jamestown
Witkin, Leonard E.....Brooklyn
Yarington, Charles T.....Moravia

North Carolina

Atkins, Junius Jr.....Raleigh
Britt, Charles S.....Charlotte
Brown, Landis G.....Southport
Bunch, Charles.....Charlotte
Burwell, Walter B.....Henderson
Graham, Charles P.....Wilmington
McAneill, James H.....North Wilkesboro
Myers, Richard T.....Winston-Salem
Norfleet, Ashley C.....Tarboro
Nowlin, George P.....Charlotte
Parrot, George F.....Kinston
Schoenheit, Edward W.....Asheville
Smith, Edward B.....Elizabeth City
Stein, Ephraim.....Brooklyn
Stewart, Daniel N., Jr.....Hickory
Weeks, Carnes.....New York

North Dakota

Hagan, Edward J.....Williston
McIntosh, Hugh A.....Minot

Ohio

Beall, Neil P.....Cleveland
Birbeck, Norman J.....Dayton
Jacoby, Ben E.....Newark
Keating, Robert A.....Columbus
Keheler, Michael F.....Springfield
Northup, Spence W.....Toledo
Pfeiffer, Charles L.....Cincinnati
Root, Joseph C.....Chagrin Falls
Sage, Harry M.....Columbus
Salter, Herbert W.....University Hts.
Taggett, Harry A.....Ashtabula
Warm, Herbert.....Hamilton
Weaver, Howard B.....Canton
Webster, Frank B.....Bellefontaine
Weintraub, Josef D.....Cincinnati
Weir, William C.....Cleveland Hts.
Wiggers, Lowe H., Jr.....Wyoming
Witwer, Russell G.....Cleveland Heights
Wright, Orville M.....Dayton
Yarris, William F., Jr.....Fostoria
Zeve, Harman S.....Youngstown

Oklahoma

Buchan, William H.....Tulsa
Coker, Battey B.....Durant
Jacobs, Raymond G.....Enid
Little, Aaron C.....Minco
Stone, Samuel N. Jr.....Oklahoma Way

Oregon

Johnson, Alstrup N.....Roseburg
Massey, George D.....Klamath Falls
Rankin, Frederick O.....Portland
Robinson, Edwin G.....Portland
Southard, Durward W.....Baker
Spangler, Paul E.....Portland
Steiner, Milton B.....Portland
Stratford, Eldridge W.....Portland

Pennsylvania

Bachman, Carl E.....Philadelphia
Buck, William A. A.....Philadelphia
Hatch, Joseph C.....Johnston
McGrail, Matthew A.....Bradford
Robbins, Frederick R.....Bryn Mawr
Stango, Victor O.....Philadelphia
Tompkins, Winslow T.....Philadelphia
Ulrich, Henry F.....Middleburg
Weniger, Frederick L.....Waymart
Willett, Arthur T.....Verona

Tennessee

Andrews, Charles G.....Memphis
Moore, Moore, Jr.....Memphis
Tendler, Morton J.....Memphis
Williams, Marvin L.....Memphis

ORGANIZATION SECTION

Official Notes

CONFERENCE OF STATE SECRETARIES AND EDITORS

The Conference of State Secretaries and Editors, which was originally scheduled to be held in November 1945, will be held at the offices of the American Medical Association in Chicago on Friday and Saturday, Feb. 8 and 9, 1946. Two sessions of the conference will be held on Friday, February 8, one session at 10 a. m. and the other on the afternoon of that day. On the evening of February 8 a program intended to be of particular interest to the editors of state medical journals will be presented. The concluding session of the conference will be held at the offices of the American Medical Association on the morning of Saturday, February 9.

Officers of constituent state medical associations and of component or district medical societies will be heartily welcome to attend the conference. All who expect to attend are urged to make necessary arrangements for transportation and for hotel accommodations at the earliest possible time.

NEW APPOINTMENT

Dr. A. Ray Dawson, who was recently relieved from service with the rank of lieutenant colonel, has been appointed assistant to the Secretary of the Council on Industrial Health of the American Medical Association, effective November 15. Dr. Dawson will be in charge of workmen's compensation and rehabilitation. Prior to his association with the reconditioning and rehabilitation program of the Army Air Forces, Dr. Dawson was affiliated with the Jefferson Standard Life Insurance Company, Greensboro, N. C., and served as medical officer in the U. S. Civil Service Commission, Washington, D. C. He graduated at the Medical College of Virginia, Richmond, in 1929.

Washington Letter

(From a Special Correspondent)

Dec. 17, 1945.

Committee Named to Coordinate Government Medical Services

President Truman has named Dr. Harold W. Dodds, president of Princeton University, head of a committee to coordinate the government medical services and to find ways of increasing medical facilities of the Veterans Administration. Also Major Gen. Paul R. Hawley, acting Surgeon General of the Veterans Administration, has selected eleven doctors, headed by Brig. Gen. Elliott C. Cutler, to serve as chief consultants to the agency. The consultants will select leading doctors throughout the country to work with staff physicians on a part time basis. The move is planned to insure the highest medical standards for hospitalized veterans. General Cutler is Moseley professor of surgery at Harvard Medical School and is attached to the Peter Bent Brigham Hospital in Boston.

Medical Center Bill to Be Modified

House District Committee members have indicated informally that they will amend the District of Columbia hospital bill, passed by the Senate, so that the entire initial cost would be borne by the federal government. The Senate had asked that private hospitals affiliating with the center pay one third of the initial cost and repay the other two thirds over fifty years. Alternate drafts of the measure are being prepared, and Representative Dan McGehee, Democrat of Mississippi, committee chairman, hopes to get action on the bill soon. The proposed District medical center has been the subject of out-

spoken testimony. Senator Millard Tydings, Democrat of Maryland, has asked for consolidation of the Twelfth District private hospitals, calling them "antiquated, rat and roach ridden, uneconomical and dangerous fire traps." He estimated the cost of the proposal at approximately \$12,000,000. Major Gen. Philip B. Fleming, Federal Security Agency administrator, also asked for support of the measure, stating that the government might wholly finance an \$18,000,000 medical center on a 25 acre site to be selected. He said the center would include 1,500 beds, a nurses' home, a school and parking space for 500 cars. It would be supervised by a corporation formed by agreement between the government and private interests. General Fleming said that Washington now has a 1,700 bed hospital shortage.

Senate Approves Federal Hospital Aid Program

The Senate has voted its approval, and similar action is sought in the House, on the federal hospital aid program, which is expected to provide \$700 million in new construction during the next five years. The committee rejected a series of amendments offered by Senators Murray, Democrat of Montana, and Wagner, Democrat of New York, which they claimed would make the bill conform with President Truman's recent congressional message on a national health program. Senators Hill, Democrat of Alabama, and Taft, Republican of Ohio, worked together to defeat the Murray-Wagner proposals, which they said would remove proper state control of the program.

Influenza Vaccine Used by Army Is on Sale to Civilians

The vaccine used to vaccinate all army personnel this fall and winter against influenza types A and B is now on the market for civilian use. The vaccine is reported to be effective against the type B virus now causing outbreaks throughout the country. A check with producers reveals that Eli Lilly & Co., the Lederle Laboratories and the Pitman-Moore Company have the vaccine available now for civilian use. Pitman-Moore states that all its branches are being supplied. Parke Davis will have the vaccine available to civilians before January. The Squibb vaccine will be available for civilian use about February 15.

Bradley Won't End Segregation in Veterans' Hospitals

Demands of Negro leaders that segregation of white and Negro veterans in some Southern hospitals be ended has been refused by Veterans Administrator Omar N. Bradley. General Hawley, acting Surgeon General, advised General Bradley that the Veterans Administration could not be used as an agency for social change and must follow local customs. A delegation of twenty-five Negro organizations sought an interview with General Bradley to present their case. A survey recently conducted under General Bradley's orders shows that of the ninety-seven Veterans Administration hospitals seventeen do not accept Negroes except in emergency and that twenty-four have separate wards for Negroes. One hospital, at Tuskegee, Ala., accepts only Negroes. The remaining fifty-five make no distinction.

Warning by Vannevar Bush that Nation Faces Deficit of Scientific Capital

A short-sighted draft policy nearly wrecked the scientific side of the American war effort, states Dr. Vannevar Bush in his annual report as president of the Carnegie Institution of Washington. He said we are still drafting scientists and students of science, even though the war is over. The United States, he declared, drew so heavily on its "scientific capital" during the war that it now faces a "serious deficit" in young scientists. Many young scientists were taken out of laboratories during the war, and "we also sacrificed the future to immediate needs more than did any of our allies or, indeed, our enemies, by halting our processes of advanced education." He declared the nation must educate for scientific research all the brilliant young minds it can find in order to keep abreast of other countries.

AMERICAN RED CROSS DISTRIBUTION OF SURPLUS DRIED BLOOD PLASMA

NOTE.—*This plan for the distribution and use of the surplus plasma has been presented to and concurred in by the Association of State and Territorial Health Officers, the American Medical Association and the American Hospital Association.*

G. Foard McGinnes, M.D., National Medical Director.

During the war, large quantities of blood were given by the American people through the American Red Cross from which dried plasma was prepared for the armed forces. The supply of this material was predicated on the needs of the Army and the Navy for a long and costly war. Because of an earlier cessation of hostilities than was reasonably to be expected in both the European and the Pacific theaters, there is now in the hands of the Army and the Navy a quantity of dried plasma which is in excess of their needs during the anticipated useful life of the plasma, namely five years from the date of processing. According to army and navy estimates, the available surplus amounts to approximately one and a quarter million packages at the present time.

The transfer to the American Red Cross of dried plasma declared surplus by the Army and the Navy is provided for by Public Law 457 of the 78th Congress, approved Oct. 3, 1944. The pertinent portion of this law, section 11 (f), reads as follows:

"No surplus property which was processed, produced or donated by the American Red Cross for any government agency shall be disposed of except after notice to and consultation with the American Red Cross. All or any portion of such property may be donated to the American Red Cross, upon its request, solely for charitable purposes."

Under the foregoing provision of Congress, a formal request was made to the Army and the Navy that all surplus plasma be transferred to the American Red Cross. This action was taken on the ground that the American Red Cross has a responsibility to the American people to assure that plasma and other derivatives of the blood voluntarily contributed for the members of the armed forces be utilized to the best advantage and not wasted or offered for sale or barter. In making this request, it was proposed that any surplus should be returned to the American people, who had made these supplies of plasma possible, for use in veterans' hospitals and in civilian medical practice. This proposal was accepted by the Army and the Navy, and accordingly they will transfer to the American Red Cross all available surplus stores of plasma and other blood derivatives.

In developing a plan for the distribution of this material it was felt that the first consideration was that the needs of the Veterans Administration be met. We therefore discussed the matter with General Hawley and arranged to provide him with the amount of plasma which he has estimated will be required for use in Veterans Administration facilities during the next five years.

In planning for distribution and use in civilian medical practice there were three factors which we believed to be of particular importance: The distribution should be carried on in such a manner as, first, to assist in making possible an accurate determination of the needs for blood and blood derivatives in the various parts of the country; second, to strengthen and stimulate the development of already established state and local civilian blood and blood derivatives programs, and, third, to demonstrate the value of such programs and thus stimulate their establishment where they do not already exist.

The surplus dried plasma amounts to about one and a quarter million packages, which it is estimated will meet civilian needs for approximately two years. We are arranging for warehouse storage space in each of our five areas, the headquarters of which are located at New York City, Alexandria, Va., Atlanta, Ga., St. Louis and San Francisco. The available plasma will be apportioned to each of these areas on a population basis and supplied to state departments of health for distribution without charge to all physicians licensed to practice medicine and surgery, and to all acceptable hospitals for use in the treatment of any patient without charge for the product. This plan is similar to that which the state departments of health have been

following in distributing the surplus immune serum globulin made available by the American Red Cross for the prophylaxis and modification of measles.

The area medical directors of the American Red Cross will make arrangements with state departments of health for a satisfactory plan for the distribution of plasma within each state, in consultation with representatives of the state medical society and state hospital association. The American Red Cross will then make an initial shipment to the health department in an amount estimated to be a three months supply. This estimate will be based on the population of the state, weighted by the number of physicians and the number of general, pediatric and maternity hospital beds. Thus, every physician may, if he desires, carry plasma with him, and hospitals may be stocked with a reasonable supply for the treatment of their patients. Replacements of plasma may be obtained on request by physicians or hospitals from the state departments of health or through the local Red Cross chapter, if the department of health does not have a local distribution center. State departments of health in turn will obtain replacements of plasma up to a six months supply by requesting it from the area office of the American Red Cross.

The state departments of health, with the collaboration of the American Red Cross, will undertake to provide appropriate information through their own channels and through state medical societies for the medical profession and the general public in regard to the availability and use of the surplus plasma.

Medical Legislation

MEDICAL BILLS IN CONGRESS

The bill introduced by Representative Priest, Tennessee, H. R. 4512, has been favorably reported to the House of Representatives by the Committee on Interstate and Foreign Commerce to amend the Public Health Service Act to provide for research relating to psychiatric disorders and to aid in the development of more effective methods of prevention, diagnosis and treatment of such disorders.

International Health Organization

The Senate Committee on Education and Labor has reported S. J. Res. 89, with recommendation that it pass, requesting the President, on behalf of the government of the United States, to urge on the United Nations Organization the prompt convening of a conference to draw up the statutes of an International Health Organization.

Miscellaneous

H. R. 4771, introduced by Representative Morrison, Louisiana, provides for the payment of direct federal assistance to individuals permanently and totally disabled, to blind individuals and to certain individuals 65 years of age or over.

A bill introduced by Representative Mills, Arkansas, H. R. 4795, proposes to prevent the smuggling of opium and other narcotic drugs into the United States, particularly from any country where such drugs are permitted to be sold to consumers for nonmedical purposes.

Creation of a Commission on Physical Fitness for American Youth is proposed by H. J. Res. 286, introduced by Representative Weiss, Pennsylvania. This commission, it is contemplated, will investigate the need for the establishment and maintenance of a nationwide physical fitness program and will transmit its recommendations to the President. An appropriation of \$50,000 is to be authorized to carry out the purposes of the joint resolution.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Artificial Limb Research.—Research which may yield the first fundamental information on artificial limbs has been started by a team of engineers, medical experts and anthropologists of the University of California. The research will delve primarily into the fundamentals of locomotion of the normal leg and the amputated leg. The scientists hope that improved artificial limbs and operative technics which will make the limb better suited to artificial reconstruction will result. Originally planned exclusively for men in the veterans' age group, the research has been expanded to include men and women in all age groups, since statistics show a far greater number of amputations in the civilian population than among veterans. University faculty members aiding in the research are Howard D. Eberhart, associate professor of engineering, in charge; Alexander S. Levens, associate professor of engineering; Dr. John B. de C. M. Saunders, professor of anatomy; Dr. Verne T. Inman, assistant chemical professor of orthopedic surgery, and Theodore D. McCown, Ph.D., assistant professor of anthropology.

GEORGIA

Cobb Gift of Hospital.—A \$250,000 gift from Ty Cobb for the construction of a modern hospital in Royston was reported in the newspapers recently. Mr. Cobb is financing the hospital as a memorial to his parents, who were born and raised in Royston.

Changes in Health Personnel.—Dr. William B. Harrison, medical director of the Northeastern Medical Region, with headquarters in Gainesville, has been named assistant director of the division of maternal and child health of the Georgia state department of health. Dr. Harold M. Graning, San Francisco, has been assigned by the U. S. Public Health Service to serve with the state health department as assistant director of local health organizations. Mr. Thomas F. St. John, recently returned from military service, has joined the state department as information executive in the division of health education.

ILLINOIS

Personal.—Dr. Ernest O. Nay, Terre Haute, Ind., who has been secretary-treasurer of the Wabash Valley Aesculapian Society for nineteen years, was elected president of the society at its recent meeting in Danville. Dr. Harlan A. English, Danville, was elected secretary-treasurer to succeed Dr. Nay. —Dr. David W. Fey, Peoria, has been appointed fire and police surgeon of Peoria.

Chicago

New Promotions at Northwestern.—Drs. John A. Wolfer and Karl A. Meyer, both associate professors of surgery at Northwestern University Medical School, were recently promoted to professors of surgery. Dr. Wolfer, who graduated at Northwestern University Medical School in 1908, has been a member of the faculty there since 1910. Dr. Meyer, who graduated at the University of Illinois College of Medicine in 1908, has been a member of the faculty at Northwestern since 1926. He is also medical superintendent of Cook County Hospital.

Hematology Research Activities.—The Hematology Research Foundation announces that the Helen Schuman Finnerman Fund, to perpetuate the memory of a leukemia victim, will be used for the hospitalization of special patients in connection with their treatment for blood diseases. A second fund, called the Ruth Reader Fellowship in Hematology, will be used to aid the graduate student working on his Ph.D. and will stimulate interest in blood research. The latter has available \$1,500 annually, while the Finnerman Fund will include all monies collected since June 1945. The Hematology Research Foundation, organized in 1944, has a medical advisory council of seven members: Dr. Raphael Isaacs, Michael Reese Hospital, Chicago; Dr. Louis R. Limarzi, assistant professor of medicine, University of Illinois College of Medicine; Dr. Andrew C. Ivy, professor of physiology, Northwestern University Medical School; Dr. Ludvig Hektoen, Chicago Tumor

Institute; Dr. Anton J. Carlson, professor emeritus of physiology, University of Chicago School of Medicine; Dr. Italo F. Volini, formerly dean of Loyola University School of Medicine; Dr. Otto Saphir, pathologist, Michael Reese Hospital and University of Illinois. The foundation has 757 members and has raised \$16,000 for blood research.

INDIANA

Dearholt Medal Goes to Murray Auerbach.—The Hoyt E. Dearholt Medal of the Mississippi Valley Conference on Tuberculosis was awarded to Mr. Murray A. Auerbach, Indianapolis, for twenty-five years executive secretary of the Indiana Tuberculosis Association. The presentation was made at the Chicago meeting of the conference on October 9.

Personal.—Mr. Robert Yoho, who has been connected with the Indiana State Board of Health, has been appointed director of the division of health and physical education.—Dr. Paul D. Williams has resigned as medical superintendent of the Richmond State Hospital, Richmond. Dr. Otis R. Lynch, Marengo, has been appointed medical superintendent of the Richmond State Hospital to succeed Dr. Paul D. Williams, resigned.

IOWA

Operation of Blood Transfusion Service.—The State University of Iowa College of Medicine, Iowa City, will conduct a course in the operation of blood transfusion and related subjects February 4-March 2 to assist in qualifying physicians to supervise and operate blood transfusion services. The course will be conducted by Drs. Elmer L. DeGowin, assistant professor of internal medicine, and Robert C. Hardin, associate in internal medicine, who assisted Dr. DeGowin in the organization of the blood transfusion service of the University Hospitals. Additional information may be obtained from Dr. John T. McClintock, in charge of postgraduate studies, Medical Laboratories Building, State University of Iowa, Iowa City.

MASSACHUSETTS

George Minot Honored.—Dr. George R. Minot, Nobel laureate in physiology and medicine, 1934, professor of medicine, Harvard Medical School, Boston, and director of the Thorndike Memorial Laboratory of the Boston City Hospital, was honored at a dinner December 5 in recognition of his sixtieth birthday, which he observed December 2. Dr. William B. Castle, Boston, was toastmaster and speakers included Drs. Henry A. Christian, Brookline; Charles Sidney Burwell, Boston; James W. Manary, Boston; Laurence B. Ellis, Boston; Elliott P. Joslin, Boston; James Howard Means, Boston, and Francis M. Rackemann, Boston. Dr. Reginald Fitz, Boston, representing the President and the House of Delegates of the American Medical Association, presented to Dr. Minot its Distinguished Service Medal for his achievements. Dr. Minot was also presented with a bound volume of letters of greetings from numerous scientists throughout the world.

MINNESOTA

Personal.—Drs. Charles Bolsta, Ortonville, and Leonard E. Claydon, Red Wing, recently completed fifty years in the practice of medicine.—Dr. Russell R. Heim, Minneapolis, coroner of Hennepin County, has been reelected secretary-treasurer of the Minnesota Association of Coroners.

Fifty-Five Years of Practice.—Dr. Alfred E. Walker, who was 83 years of age December 3, has been practicing in Duluth continuously since 1890. Dr. Walker and his wife observed the fiftieth anniversary of their marriage last August. He graduated at Bellevue Hospital Medical College, New York, in 1890. *Minnesota Medicine*, which recently credited Dr. Alfred M. Ridgway, Annandale, as being the state's oldest practicing physician (*THE JOURNAL*, October 27, p. 642), reports that Dr. Walker ties with Dr. Ridgway in age and years of service.

Actions of State Medical Board.—Mrs. Helen Geneva Rudd, Minneapolis, was recently taken to the federal woman's reformatory, Alderson, W. Va., to serve a three year sentence which she had received in 1943. At that time she was placed on probation and ordered to the government hospital at Lexington, Ky., for treatment of drug addiction. The recent revocation of this probation and commitment to the West Virginia institution concludes a twenty year history of a drug addict and represents an activity of the Minnesota State Board of Medical Examiners in ending a long list of impositions of Mrs. Rudd in her attempt to obtain narcotics.

"Dr." John P. LeMay, also known as "Rev." John P. LeMay, and his mother, Mrs. Florence LeMay, were recently sentenced to a term of one year in the Minneapolis Workhouse following their pleas of guilty to the illegal practice of medicine. One witness testified that she had paid a sum of money to the defendants for so-called "detoxification" treatments, which consisted of an enema which lasted about an hour, "medical pills" and prescription for a diet. When arrested, LeMay had on display in his office the license to practice medicine and the basic science certificate formerly held by a Minneapolis physician who died in January 1944. Testimony revealed that Mrs. LeMay had formerly been employed as secretary of the deceased physician.

NEBRASKA

Personal.—Dr. John M. Thomas, Omaha, has been appointed a member of the Omaha School Board to complete the term of the late Dr. Claude W. Mason, who had been elected to the board for six years, the term to end in 1947.

State Cancer Society Organized.—The Nebraska Society for the Study of Cancer was organized at a meeting in the Paxton Hotel, Omaha, October 26, with Drs. Edward W. Rowe, Lincoln, as president, and Frank H. Tanner, Lincoln, secretary. The society is an outgrowth of a resolution passed by the house of delegates of the Nebraska State Medical Association at its last annual session, which recommended the organization of a cancer research society, the purpose of which will be to cooperate with the American Cancer Society.

NEW JERSEY

Personal.—Dr. Bradford Craver, instructor in pharmacology, University of Rochester School of Medicine and Dentistry, has joined the department of pharmacology, research division, Ciba Pharmaceutical Products, Lafayette Park, Summit.

Library Dedicated to Physician.—Dr. Samuel B. English, for many years medical director and superintendent of the New Jersey Sanatorium for Tuberculous Diseases, Glen Gardner, was honored October 6 when the sanatorium's new library was dedicated to him.

Oil Company Inaugurates Research in Toxicology.—Dr. Joseph P. Holt, formerly associate professor of physiology at the University of Louisville School of Medicine, has joined the medical department of the Standard Oil Company as a specialist in toxicology. He will be responsible for original research in the biologic effects of toxic substances. Dr. Holt will also act as consultant and adviser to the company committee, representing all phases of the company's operation, which is charged with the elimination of potential hazards to workers. With the establishment of this branch of its medical department, Jersey Standard announces that it is the first oil company to undertake its own work in this field. Previously, research has been conducted in outside institutions and laboratories. Dr. Holt graduated at Louisville in 1936. He had been a member of the staff there since 1937.

NEW YORK

Personal.—Dr. Leslie H. Wright has resigned as superintendent of the Genesee Hospital, Rochester. —Dr. Lewis J. Graham, Corning, has been appointed medical director of Corning Glass Works, Corning, filling the vacancy that occurred when Dr. Willis C. Templer died last May. —Dr. Exie E. Welsch, formerly director of the Rochester Guidance Center, has been appointed psychiatrist on the staff of the Bureau of Child Guidance, New York City Board of Education.

New York City

Victory Meeting on Health.—A victory meeting of the Public Health Association of New York City in collaboration with the American Public Health Association was held at the Hotel Pennsylvania, New York, December 13-14. The program was devoted to discussions on environmental sanitation, public health in New York City in 1945, health education, training and recruitment, the war's influence on public health, public health problems highlighted by the war, medical service plans, newer emphasis in public health and what's new in school health.

Annual Report of Research Institute.—The annual report of the Public Health Research Institute of the City of New York, Inc., for the year ended June 30 has recently been made available. The report discusses the activities carried on in the institute during the year and announces that an agreement has been reached between the city of New York and Columbia University providing for a building containing at

least 50,000 square feet of laboratory space for the use of the Public Health Research Institute in a proposed research-teaching hospital center. In addition, a 50 bed unit is to be provided in the hospital for use by the institute for the study of disease.

Research Fund Named for Maurice Lewi.—To honor Dr. Maurice J. Lewi on his eighty-eighth birthday, December 1, the Maurice J. Lewi Research Fund, Inc., has been created "to be utilized for research and kindred purposes in connection with the medical sciences, with special attention to as yet unsolved problems in that branch of the healing art known as podiatry (chiropody)." Dr. Lewi graduated at the Albany Medical College in 1877. He has served as professor of medical jurisprudence at the Albany Law School and lecturer at the Albany Medical College. He has also served as president of the first Institute of Podiatry, the Foot Clinics of New York and the Albany County Medical Society. For twenty-one years he was secretary of the New York State Board of Medical Examiners.

Hall of Residence and Alumni Hall.—Two special features figure prominently in the proposed New York University-Bellevue Medical Center, one a Hall of Residence and one an Alumni Hall. The Hall of Residence will cost \$750,000 and will comprise ten stories to contain 279 rooms and private living quarters for New York University medical students unable to reside at home who must now find quarters in the scattered boarding houses of the neighborhood. The Alumni Hall will be an auditorium, will cost \$500,000 and when completed will be large enough to accommodate all the undergraduates. It will form an individual unit at the heart of the new center and will join the main college and hospital building on one side and the Hall of Residence on another. Campaigns are now under way to raise funds for both units. The entire project with these units and other proposed additions will cost about \$27,500,000. The university's share will be \$15,000,000. The city will spend \$12,500,000 to rebuild its present Bellevue Hospital area, which will join the university's new building along First Avenue. The combined project will cover the nine city blocks between 25th and 34th streets, First Avenue to East River Drive. The university's buildings will occupy a four block area bounded by East River Drive, 30th Street, First Avenue and 34th Street—the section immediately north of the present Bellevue area. The city's new Bellevue development will extend from 25th to 30th streets and from First Avenue to East River Drive. The university section will include a new college of medicine building, a university clinic, a 480 bed university and an Institute of Forensic Medicine, the last mentioned to be the first of its kind in the world and to be built by the city on land to be provided by New York University. Members of the university faculty will staff it. In addition other units will be the Hall of Residence and the Alumni Hall. There will be six institutions housed in New York University structures. One H shaped building to cost \$8,500,000 will be nineteen stories and contain the clinic on the ground floor, the college of medicine above that and, superimposed on them both, a fourteen floor hospital.

NORTH DAKOTA

Personal.—Dr. Mary E. W. Soules, Dickinson, was recently appointed director of the southwest district health unit with temporary headquarters in New England. The unit comprises the counties of Slope, Bowman, Golden Valley, Billings, Hettinger and Adams.

Membership of State Medical Board.—Dr. Charles W. Schoregge, Bismarck, is president of the North Dakota State Board of Medical Examiners and Dr. George M. Williamson, Grand Forks, secretary-treasurer and general administrative officer. Other members of the board include Drs. Frederick W. Fergusson, Kulm; Cyril J. Glaspel, Grafton; Olafur W. Johnson, Rugby; William H. Long, Fargo; Archibald D. McCannel, Minot; Frederick L. Wicks, Valley City, and Willard A. Wright, Williston.

OHIO

Personal.—Wirth Howell has been named acting director of the Cleveland Child Health Association. Dr. Richard A. Bolt, Cleveland, resigned as director early this year to assist in the organization of the new school of public health at the University of California, Berkeley (THE JOURNAL, June 30, p. 678). —Dr. Eugene E. Elder, Massillon, has been appointed head of the Youngstown Receiving Hospital for Mental Cases, succeeding Dr. C. Herbert Cronick, who resigned recently. (THE JOURNAL, September 29, p. 371). —Dr. George T. Bly-

denburgh, director, student health service, Ohio Wesleyan University, Delaware, is the new secretary-treasurer of the American Student Health Association.—Dr. Jacob B. Moses Sr., Crestline, celebrated his fiftieth anniversary as a practicing physician on July 20.—Dr. and Mrs. Lucius W. Prichard, Ravenna, on October 19 observed their fiftieth wedding anniversary.

Academy of Medicine Lectures.—Lectures to be held during 1946 by the Academy of Medicine of Cincinnati include the following:

- Dr. Bruce K. Wiseman, Columbus, January 8, The Spleen and Blood Formation.
- Dr. Hiram H. Merritt, Cambridge, Mass., January 22, The Treatment of Epilepsy.
- Dr. Milton J. E. Senn, New York, February 5-6 (The B. K. Rachford Lectures, subjects not announced).
- Dr. Edmund H. Botterell, Toronto, Canada, February 19, Diagnosis and Treatment of Injuries to the Brain and Spinal Cord.
- The Roger Morris Lecture, March 5 (speaker to be announced).
- Dr. Sumner L. S. Koch, Chicago, March 19, Injuries of the Nerves and Tendons of the Hand.
- Dr. Charles A. Janeway, Boston, April 2, Studies on Clinical Uses of Plasma Protein Fractions.
- Dr. Harold G. Wolff, New York, April 16, Reactions of the Nasal Mucous Membranes and the Stomach Engendered by Emotions.
- Dr. Frank H. Lahey, Boston, May 7, The Management of Lesions of the Terminal Ileum, Colon and Rectum.
- Dr. Walter L. Palmer, Chicago, May 21, The Nature and Treatment of Peptic Ulcers.

OREGON

Personal.—Dr. Dorothea H. Scoville, formerly of New London, Conn., U. S. Public Health Service, has resigned as health officer of Clatsop County to take charge of the maternal and child health work in Richmond, Calif.

New Fellowship in Endocrinology.—The Schering Corporation, Bloomfield, N. J., has created a research fellowship in endocrinology at the University of Oregon Medical School, Portland. The grant of \$3,000 for one year's research on gonadotropic hormones is under the direction of Dr. Carl G. Heller, associate professor of physiology and medicine.

PENNSYLVANIA

Philadelphia

First Report of Health Maintenance-Cancer Prevention Clinics.—In the first twelve months of operation of the health maintenance-cancer prevention clinics in Philadelphia, sponsored by the International Cancer Research Foundation, 2,552 persons were examined, 350 of whom were men. Of this total 1,838 were referred to their physicians for care, and 18 who were unable to afford a personal physician were referred to clinics. To obtain a check on the cancer incidence of those patients referred to physicians, letters were sent to 1,148 physicians, all but 91 of whom replied. The reports indicated that 248 examinees failed to see their physicians; 11 of those examined reported a history of cancer in the family. Of malignant disease there were 14 cases, 2 in men (chondrosarcoma of the right ileum and carcinoma of the prostate gland), 12 in women (3 epitheliomas of the skin, 2 carcinomas of the breast, 2 carcinomas of the cervix, 2 carcinomas of the fundus uteri, 1 carcinoma of the gallbladder, 1 carcinoma of the forehead and left tragus and 1 case of abdominal carcinomatosis). Of the many and varied findings may be noted lesions of the cervix 795, cardiovascular diseases 545, skin lesions 406, hemorrhoids 393, benign tumor 253, cystoceles 221, rectoceles 201, nevi 157, genitourinary disturbances 144, obesity 112, hernias 59, prostatic disturbances 55, vaginitis 67, anemias 28, pulmonary tuberculosis 7 and aortic aneurysm 1. Teeth required attention in 102 cases, the feet in 441. Mildred W. S. Schram, Ph.D., secretary of the International Cancer Research Foundation and director of the clinics, has at the request of representative medical groups visited Princeton, N. J., Erie, Pa., New Orleans, Houston, Texas, and some cities in northern California to discuss legal problems and help with the arrangements for establishing such examining centers as those created in Philadelphia (THE JOURNAL, Aug. 26, 1944, p. 248). In her report Dr. Schram states that there is a clinic in Pittsburgh which is almost one year old and that the New Orleans Parish Medical Society has passed a resolution requesting six hospitals to organize clinics. The Massachusetts State Department of Health plans to have one in connection with each of its tumor clinics throughout the state, the first of which was said to be organized in Fall River last spring. The Philadelphia clinics are held at the following hospitals: Hahnemann, Jeanes, Jefferson, Jewish, Lankenau, Pennsylvania, Temple, University of Pennsylvania and Woman's Medical College.

TENNESSEE

Grant for Research.—A grant has been made by Sharp and Dohme, Inc., Glen Olden, Pa., to the department of bacteriology of the University of Tennessee, Knoxville, for a study of sulfonamide drugs in the control of fowl typhoid infection, according to *Science*. The investigation will be conducted by Darlington F. Holtman, Ph.D., professor of bacteriology and head of the department.

New Head of Department of Urology.—Dr. Thomas D. Moore, Memphis, has been appointed professor and head of the department of urology at the University of Tennessee College of Medicine, Memphis, effective December 1. Dr. George R. Livermore, who has been head of the department of urology since 1916, has asked to be relieved of his responsibilities as head of the department. His resignation has been accepted, but he will continue as a professor after a temporary leave of absence.

TEXAS

Dormitory Named for Physician.—The dormitory of Baylor University was recently redecorated and renamed for Dr. John T. Harrington, Waco, since 1932 chairman of the board of trustees at Baylor University. The dormitory will be known as Harrington Hall. Dr. Harrington has practiced medicine sixty-six years and has been associated with Baylor as official physician and as a member of the board of trustees for many years.

Dallas Clinical Conference.—The fifteenth annual spring clinical conference of the Dallas Southern Clinical Society will be held at the Hotel Adolphus, March 18-21, 1946. A preliminary program includes the following speakers:

- Dr. Charles A. Doan, Columbus, Ohio, Medicine.
- Dr. Jacob A. Bagen, Rochester, Minn., Gastroenterology.
- Col. John C. Woodland, M. C., Fort Sam Houston, Military Medicine.
- Dr. Alfred Blalock, Baltimore, Surgery.
- Dr. John S. Lockwood, New Haven, Conn., Surgery.
- Dr. Richard H. Sweet, Boston, Surgery.
- Dr. Charles B. Huggins, Chicago, Urology.
- Dr. Joe V. Meigs, Boston, Gynecology.
- Dr. Donovan J. McCune, New York, Pediatrics.
- Dr. Edmund B. Spaeth, Philadelphia, Ophthalmology.
- Dr. Albert C. Furstenberg, Ann Arbor, Mich., Otolaryngology.
- Dr. William H. Sebrell Jr., Washington, D. C., Basic Science.
- Dr. Ira H. Lockwood, Kansas City, Mo., Radiology.

Additional information may be obtained from the secretary of the Clinical Society of the Dallas Southern Clinical Society, 433 Medical Arts Building, Dallas 1, Texas.

GENERAL

National Noise Abatement Council.—At the annual meeting of the National Noise Abatement Council in New York recently Paul J. Washburn, New York, was elected president. Allen Wilson, Chicago, past president of the Greater Chicago Noise Reduction Council, was elected vice president and appointed chairman of a committee to develop a peacetime program designed to reduce needless noise in home, street and factory.

Visitors to the United States.—Two representatives of the Industrial Health Research Board of the British Medical Research Council, Dr. Donald Hunter, physician to the London Hospital and director of its department of research in industrial medicine at the hospital, and Mr. R. S. F. Schilling, secretary, industrial health research board, are studying industrial health activities in the United States. They visited the Council on Industrial Health of the American Medical Association.

Macy Foundation Discontinues Reprint Service.—The War Reprint Service of the Josiah Macy Jr. Foundation will be discontinued by January 1. The reprint service of the foundation has been an effort to bring new and important developments in the science and practice of medicine to medical officers who were largely cut off from the sources of medical information during the war. In the selection of these articles the foundation has had the active cooperation of the committee on pathology of the National Research Council and of the National Committee for Mental Hygiene.

Psychiatric Personnel Placement Service.—Capt. Forrest M. Harrison (MC) has been named director of a newly established psychiatric placement service to function under the auspices of the American Psychiatric Association of the National Committee for Mental Hygiene. The service is designed especially to help physicians and psychiatrists make contacts with training opportunities such as residencies, postgraduate courses and fellowships and to aid institutions in locating suitable candidates for appointments. Physicians interested in psychiatry are invited to send in full biographic state-

ments including personal data, education, training, experience and special desires in order that this service may be of the greatest possible assistance to them. Deans of medical schools, superintendents of hospitals and directors of industrial organizations, clinics, and others employing or participating in the training of psychiatric personnel, are invited to submit full information regarding available positions and courses, including financial details. Foundations, universities and other agencies are asked to report pertinent fellowships in psychiatry, psychosomatic medicine and child guidance. Inquiries should be addressed to Capt. Forrest M. Harrison (MC), National Committee for Mental Hygiene, 1790 Broadway, New York 19.

Insurance Research Fund Starts Operation.—The Life Insurance Medical Research Fund announces that applications for grants may now be made to support fundamental research bearing on cardiovascular disease, including rheumatic fever, hypertension, arteriosclerosis and allied disorders. Funds will become available after January 1, and grants will be made for varying periods of time with the specific requirements of the research problems. Applications for grants may now be made to the chairman of the advisory council and should be transmitted in duplicate through the administrative officer of the institution making application. Requests for grants should include a description of the proposed research, a budget and the date when funds are desired. Applications received by February 1946 will be given consideration at a meeting of the advisory council to be held on or about March 1, 1946. The creation of the research fund was sponsored by the American Life Convention and the Life Insurance Association of America. One hundred and forty-six life insurance companies in the United States and Canada are cooperating in the Life Insurance Medical Research Fund. An advisory council of eight members was created (*THE JOURNAL*, August 11, p. 1118) and a committee of four physicians was named to the council. Dr. Francis G. Blake, chairman of the advisory council, which will assist the board of directors of the fund in making grants, may be addressed at Yale University School of Medicine, 333 Cedar Street, New Haven 11.

FOREIGN

Manufacture of Penicillin in India.—The government of India has under consideration the appointment of a committee to advise the government on the steps to be taken to manufacture penicillin in India, it is reported.

Baly Medal.—The Baly Medal of the Royal College of Physicians, London, has been awarded to Professor August Krogh of the Zoophysiological Laboratory at Copenhagen, according to *Science*. Dr. Krogh was awarded the Nobel prize in physiology and medicine in 1920.

Personal.—At the request of the Yugoslav Ministry of Health and the army general staff, Sir Harold D. Gillies has recently arrived at the Belgrade airport from England to work with the UNRRA mission. He was to remain in Yugoslavia several days to acquaint local doctors with the latest developments in repair of bodily disfigurements caused by war, accident and disease. He will leave behind several working teams of plastic surgeons trained by him to conduct practical demonstrations in plastic surgery in other areas.

Ernest Sauerbruch Dismissed as Chief of Berlin Health Service.—The four military governors of Berlin voted unanimously October 11 to dismiss Dr. Ernest F. Sauerbruch, Berlin, from his post as chief of the Berlin Public Health Service, the *Chicago Sun* reported. It was stated that Sauerbruch never had been a member of the Nazi party but had been an early admirer of Hitler. The *Sun* stated that the action of the military governing body set something of a precedent. "He prospered under the Nazis and received a position of prominence, whereby his position directly and indirectly contributed to the prestige of the Nazi party." It was indicated that Sauerbruch may still be arrested. Meanwhile his services will be used in a position without administrative authority at the Berlin Charity Hospital, it was stated.

Commission Named to Study Medical Needs in Poland.—Johannes H. Bauer, New York, of the International Health Division of the Rockefeller Foundation, is on loan to the Red Cross to be one of a three member commission to tour Poland to ascertain "prime needs for the \$1,000,000 tentatively earmarked for relief work." According to the *New York Times* the UNRRA, which is bringing in food and clothing, has altered the relief problem, shifting the Red Cross emphasis to medical assistance. The *Times* stated that Poland's health and medical service is broken down completely, but the six thousand doctors that the country has left

of a prewar total of thirteen thousand are struggling "valiantly" to control disease. It is estimated that 70 per cent of Poland's hospitals and clinics were destroyed. Medical records of the UNRRA show that 12,000 cases of typhus, 22,000 of typhoid, 3,400 of dysentery, 6,000 of scarlet fever and 6,500 of diphtheria were reported in Poland up to the end of August. Last week 32,100 new cases of typhoid alone were reported. Doctors say that there are at least 1,000,000 cases of venereal disease.

Proposed Medical Center at American University of Beirut.—Plans for the construction of a medical center at the American University of Beirut, Lebanon, at the estimated cost of \$2,500,000 were announced November 17 by Albert W. Staub, American director of the Near East College Association. The board of trustees of the university has approved the project. The building will have four main wings and two cross wings and will increase the bed capacity by more than 250 per cent, making possible the training of 25 per cent more medical students. As a teaching hospital the building will contain classrooms in conjunction with clinical work, administrative offices, living quarters for interns, staff suites, rooms for the nursing staff and guest rooms. Each service will have its own operating rooms. Nurseries will be designed in the most modern way, with no more than 8 bassinets to a room. Air conditioning will be provided for all operating suites and for private and semiprivate rooms. In the summer, humidity will be controlled throughout the hospital. The American University of Beirut, one of the eight colleges affiliated with the Near East College Association, was founded in 1866 with a charter from the state of New York. Its medical school opened a year later. Work is expected to start on the new building this coming spring.

Government Services

Disposition of Meyerhof's Library

The *Army Medical Library News* announces that collections of the late Dr. Max Meyerhof of Cairo, totaling 10,000 volumes on ophthalmology and ancient Egyptian medicine, were given to the libraries of Fouad I University, Cairo, and Farouk I University, Alexandria. The Army Medical Library has secured from another source an almost complete collection of Dr. Meyerhof's work. This collection includes manuscript materials by Dr. Meyerhof, some of which are unpublished, and also a number of writings about Dr. Meyerhof and his work. A recent photograph of Dr. Meyerhof has been received as a gift of Dr. Henry R. Viets, Boston, to the portrait collection.

Woman Scientists Retire from Public Health Service

Ida A. Bengtson, Ph.D., and Alice C. Evans, Sc.D., were guests of honor at a dinner at Washington recently given in recognition of their retirement after many years of service with the National Institute of Health, U. S. Public Health Service. Dr. Bengtson's retirement will be effective January 1, ending twenty-nine years' service with the institute. Dr. Evans retired October 1, concluding thirty-five years' service. Dr. Evans of Heath, Pa., identified undulant or Mediterranean fever in 1923. Twenty-two years ago, during the course of her laboratory work, she contracted the fever and, although suffering from recurrent attacks, has continued her experiments. By her persistent research she succeeded in tracing the disease to blooded goats which had been imported to the United States from the Mediterranean. Her studies proved also that undulant fever and the disease in cattle in the United States known as Bang's disease are caused by identical germs. Dr. Bengtson of Harvard, Neb., prepared, during 1935-1936, the standard for gas gangrene toxins and antitoxins. This is the standard used by the League of Nation's Health Committee in Copenhagen, Denmark. Following this work, Dr. Bengtson was detailed to study the virus of trachoma at the Missouri Trachoma Hospital. During subsequent research in endemic typhus she became ill with this disease while inoculating rats for study purposes. She contributed to the early studies of the cause and prevention of food poisoning in canned foods, and for the past ten years she has been devoting herself to work in rickettsial diseases.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 25, 1945.

The Socialist Government and the Medical Profession

The intransigent attitude of the socialist government toward the efforts of its predecessor to come to an agreement with the representatives of the medical profession on the projected national health service seems to be considerably modified. Having made political capital out of the negotiations by denouncing them as "a surrender to the doctors," the present government is now following the same path. By direction of the council of the British Medical Association the secretary, Dr. Charles Hill, wrote to the minister of health, Mr. Bevan, expressing the desire that the representatives of the medical profession should be fully consulted before legislation for a national health service was introduced. Mr. Bevan replied that he would be happy to meet the negotiating committee of the profession before the government finally decides what proposals it will submit to Parliament. At the annual conference of local medical and panel committees, held at the House of the British Medical Association, considerable concern was expressed at the failure of the minister of health to give any indication that he proposed to enter into negotiations with the medical profession before introducing his new health services bill. The reading of his reply to Dr. Hill therefore gave much satisfaction.

Research on Aging

In 1939 a Club for Research on Aging was established in this country. As the name indicates, it consisted of workers engaged in research and was not a medical society in the ordinary sense of the word. There are branches of the club in Britain, the United States, France and Argentina. At present there are only 75 members in the club. The Nuffield Foundation has generously supported a plan for research work, which is being conducted at one of the hospitals of the London County Council. At the end of 1944 Lord Nuffield made a donation of \$15,000 to establish an experimental laboratory, the Gerontological Research Unit, which is at present housed in the Departments of Zoology and Physiology of Oxford University. The American branch of the club has already done important work, which includes a museum of senile tissues, clinical research on the effects of vitamins on old persons at Elgin Hospital and the publication of the *Journal of Gerontology*.

Mr. James Sherren: The Surgeon Who Went Back to the Sea

Mr. James Sherren, consulting surgeon to the London Hospital, who has died at the age of 73, had a remarkable career. Born at Weymouth by the sea, he had an inborn love for ships, went to sea and served before the mast. But after a hard and testing experience he suddenly left the sea for the study of medicine at the London Hospital. After a distinguished career he qualified at 27 and was elected to the surgical staff of the hospital in 1902. At this time abdominal surgery was rapidly advancing and he quickly attained a foremost position in this branch. He also did pioneer work with Head on the peripheral nervous system and published an important monograph entitled *Injuries of Nerves and Their Treatment*. During the war of 1914-1918 he was consulting surgeon to the War Office and did much work in military hospitals. He became a member of the senate of London

University and seemed on the way to the highest honors, when he suddenly retired from practice and went back to the sea in the capacity of a ship's medical officer. He was then only 54 and at the height of his career as a surgeon with the possibility of many active years as a leading surgeon before him.

Honor for an American Scientist

The Copley medal of the Royal Society has been awarded to Dr. O. T. Avery for his success in introducing chemical methods in the study of immunity against infective diseases. Dr. Avery, who was elected foreign member of the society last year, is a research fellow of the Rockefeller Institute in New York.

PARIS

(From Our Regular Correspondent)

Nov. 22, 1945.

French Association of Surgery

The forty-eighth Congress of the French Association of Surgery was held in Paris in October, with a large number of French and foreign surgeons attending. This meeting was scheduled to be held in 1939 but had to be postponed because of the war and the German occupation. The present report includes some of the subjects discussed.

THYROTOXICOSIS

For this condition Petit-Dutaillis recommended subtotal thyroidectomy. He reserves medical and physical therapeutic treatment for light, acute forms of the disease and for post-operative relapses. Thyroidectomy should be performed in one or in two stages. He then summarized the 237 cases which he had observed for periods varying from one to nine years. From 80 to 90 per cent of the patients resumed their normal life. Relapses occurred in less than 10 per cent and were ameliorated by radiotherapy. With a series of films, Velti of Paris presented his experience on 5,000 patients with thyrotoxicosis on whom he operated in two stages with an interval of three months. He stressed the importance of technical details. Fontaine and Miss Oswald of Strasbourg reported the 65 thyrotoxic goiters operated on from 1940 to 1944 by subtotal thyroidectomy in a single operation and under local anesthesia. Of 58 patients, 1 is dead. Among 7 other patients operated on in the state of asystolia, there were 2 deaths and 5 recoveries. Arterial tension was transiently modified after the operation; hypertension completely disappeared in only 1 case.

Petit-Dutaillis emphasized the part of thiourea and its derivatives and of aminothiazole in the preparation of serious cases for operation but pointed out the accidents due to this chemotherapy. However, at the recent congress of the French Association for the Advancement of Science Bovet emphasized that the treatment of thyrotoxicosis by aminothiazole was innocuous in 100 cases treated. As for acute postoperative crisis Petit-Dutaillis emphasized the part of thyroxin administered immediately after operation. Moor of Brussels believes that thyroxin gives transient results. Delannoy of Lille presented a report on 400 cases with operation in two stages. He practiced the total operation on the right side and the subtotal on the left. He did not operate on 22 seriously ill men, using radiotherapy and medical treatment. He was successful in treating a young woman patient with thyroid grafts after failure following an operation on the sympathetic (Leriche's method). To prevent postoperative myxedema Peycelon of Lyons, as well as Leriche, advised against total thyroidectomy and recommended retaining part of the sound gland. Arnaud of St. Etienne does not remove the isthmus, where, in his opinion, the sound tissue lies.

FUNCTIONAL RESULTS OF BILIODIGESTIVE ANASTOMOSIS

Mallet-Guy of Lyons pointed out that for the last forty years the good results of gallbladder anastomosis have been recorded in France; cholecystogastrostomy was more successful than cholecystoduodenostomy. Bachy and Lenoir presented 7 cases of gastrocholecystostomy for cancer of the pancreas with 2 deaths and 5 survivals. Mallet-Guy dealt with the discussion between the surgeons of Paris and those of Lyons concerning cholecystoduodenostomy in cholelithiasis. The surgeons of Lyons consider it a simplification in serious cases, especially since it leads to a quick recovery, often in eight days. Bachy and Lenoir presented 7 cases of secondary anastomosis, of which 2 were fatal, associated with biliary fistula after external drainage.

ORTHOSTATIC DISEASES AND SURGERY

Constantini of Algiers explained that orthostatic phenomena occur in patients with varicose veins and with cardiac insufficiency. These changes, he believes, are due to a redistribution of blood volume, which, depending on the patient's position, is directed either toward the lower extremities or toward the heart, which then becomes dilated. Clinically there is a sensation of vertigo or anguish with variable pulse and blood pressure. Extensive saphenectomy removes these disorders.

TREATMENT OF HALLUX VALGUS

Vallet of Paris proposed a technic which avoids the pain and the ankylosis: resection of a large part of the phalanx, reduction of the metacarpal head to a cylinder appropriate to the dimensions of the phalanx with a large fibrous interposition.

EXTRA-PLEURAL PNEUMOTHORAX

Le Foyer and Delbec of Paris reported 450 cases of extra-pleural pneumothorax performed in the surgical treatment of pulmonary tuberculosis over an eight year period. Hemorrhagic or suppurative complications were exceptional.

TREATMENT OF ABSCESES OF THE BRAIN

Ferey of St. Malo explained Clovis Vincent's technic for ablation of an abscess of the brain. At first all possible antibacterial substances are used and one waits for six to eight weeks, carefully watching the general condition of the patient. The abscess becomes walled off, and then at operation the whole abscess with its capsule is removed in the same way as an aseptic tumor.

NEW TECHNIC OF RENAL SURGERY

Heitz-Boyer of Paris illustrated with films a technic of renal surgery by which complete removal of very large kidneys is possible. He employs a large ilcolumbocostal incision and excises the whole of the twelfth rib.

A New Antibacterial Substance: Subtiline

In 1897 Metchnikoff, whose birth centenary was recently commemorated by an exhibition at the Pasteur Institute, found that *Bacillus subtilis* acts on the tetanic and diphtheritic toxins by destroying their toxic power. On May 8 at the Académie de médecine Jean Ramon, G. Ramon and Richou stated that they have succeeded in determining the antibacterial power of the filtrates of this saprophyte. They prepared a culture medium of vegetable substances with bran as a base. The filtrates obtained are comparatively rich in proteose and have gelatinolytic and bacteriostatic properties. The filtrates are bactericidal and bacteriolytic for the bacillus of diphtheria, the Preisz-Nocard bacillus, the anthrax bacillus, the coccobacillus of pseudotuberculosis and Chiga's dysentery bacillus. The active substance of the filtrate, called subtiline, is now being extracted in a concentrated and purified form with a view to its clinical application.

BRAZIL

(From Our Regular Correspondent)

SÃO PAULO, Nov. 12, 1945.

Intra-Arterial Injection of Penicillin

THE JOURNAL in its July 14 issue published an article on intra-arterial injection of penicillin for infections of the extremities. This method has been widely and successfully employed in São Paulo at the Sanatório São Lucas by Dr. Eurico Branco Ribeiro, according to his article published in August 1944. He proposed the use of penicillin by arterial puncture in infections of the extremities. This method is indicated in acute osteomyelitis, phagedena, paronychia and pyogenic arthritis. In order to prolong the therapeutic influence of the penicillin a venous tourniquet can be applied for twenty to thirty minutes. The arterial puncture—in the femoral or in the humeral artery, according to the site of the lesion—can be made once or twice a day for a fortnight without injury to the artery. Dr. Eurico Branco Ribeiro injected 3 to 5 cc. of a solution of penicillin, i. e., 15,000 to 25,000 units of the drug. The injections were well tolerated by the patients. The pain decreased rapidly and healing occurred in a shorter time than with any other treatment. Dr. Eurico Branco Ribeiro emphasizes the safety of the method, its simplicity and the good results obtained.

Cervical Polyps and Polypoid Disorders of the Cervix

Dr. Licínio Dutra was awarded the "Honório Libero Premium" conferred annually by the Paulista Association of Medicine. In his monograph, Dr. Licínio discusses cervical polyp and polypoid disorders of the cervix. He describes the simple mucous polyp of the cervix and its structural modifications as well as polypoid disorders of the cervix, which macroscopically appear to be simple mucous polyp. He devotes a special chapter to the discussion of gynecologic disorders accompanying cervical polyps which gynecologists should recognize in order to treat them correctly. Dr. Licínio emphasizes the necessity for microscopic examination of all cervical polyps, because of their varied structure. A cervical polyp should be completely extirpated and the site of implantation destroyed by electrocoagulation. If microscopic examination reveals syphilis, tuberculosis, carcinoma or sarcoma the treatment must be correspondingly different. With reference to his own experiences and those of other authors he discusses the problems of early diagnosis of carcinoma of the cervix and squamous metaplasia of a mucous polyp. Dr. Licínio considers the latter a precancerous condition, particularly when associated with irritant agents.

Pemphigus Foliaceus

A large new pavilion for women has been opened at the Hospital for Pemphigus Foliaceus ("wildfire"), a disease prevalent in the interior of the state of São Paulo. Dr. João P. Vieira, director of the special service of pemphigus foliaceus, reported that the hospital capacity has been increased from 60 to 150 beds, and many improvements have been introduced which will help in the campaign against this dreadful disease.

The Association of Thiamine Hydrochloride and Mono-Io-Phenil

The object of Dr. Cândido Botafogo's recent experimental work was to ascertain whether thiamine hydrochloride undergoes alteration in the presence of mono-io-phenil, a salt composed of organic iodine and aminopyrine, or whether it retains all its biologic properties. The possibility of the oxidation of thiamine hydrochloride and its transformation into thiochrome, rendering it inactive in the treatment of multiple neuritis, is well known. The tests carried out by the author were based on the cure of polyneuritis in pigeons (Kinnear-Peters) and in

rats (M. J. Smith). Dr. Cândido describes the principal technic in the processes mentioned. Some animals with induced thiamine hydrochloride deficiency were injected with the substance to be tested and others received the control substance. It was found that with the two solutions an identical response was obtained from the animals under observation. Dr. Cândido Botafogo concludes that thiamine hydrochloride retains its properties satisfactorily in the presence of mono-*o*-phenil when present in the dose indicated in the solution tested.

Brief Items

Dr. Samuel Leão de Moura, director of the Public Health Laboratory of the city of Santos, São Paulo, has recently published a report concerning schistosomiasis *mansoni* discovered by him in the district of Saboó. Dr. Moura has examined the feces of 1,126 persons of this district and found 113 positive cases (9.1 per cent). The disease until now has not occurred in the city and probably was imported from northeastern Brazil through commercial exchanges between the main port of the state and that region, where the infection is highly prevalent. The drastic measures that have been taken to control the spread of the disease have been fully approved by Dr. Cesar Pinto, a specialist of the Oswaldo Cruz Institute of Rio de Janeiro, who has just visited the city of Santos.

This month at São Paulo the Paulista Association for the Study of Industrial Medicine was organized. Dr. Borges Vieira, professor at the School of Public Health of the University of São Paulo, was elected president of the society.

Dr. Antonio C. Camargo, professor emeritus of medicine at the University of São Paulo, recently addressed the Paulista Medical Association on the "Councils of Medicine" created by a recent decree of President Getutulio Vargas. Dr. Camargo reminded the association that these councils would have represented an improvement in the practice of medicine in Brazil if the decree had followed the main lines of the bill introduced in 1937 in the Brazilian congress at the request of the leading medical societies. Nevertheless the decree of President Vargas has treated the subject merely as a punitive measure which was expected to be used as a political weapon against physicians at a time when Brazil is hoping to have fair elections for president and for congress. As an old and mature practitioner of medicine, Dr. Camargo declared that he was against the organization created by the Vargas decree.

Personal

Dr. Italo Sciascia, associate professor of medicine at the Paulista School of Medicine, has left for the United States at the invitation of Dr. Thomas I. Price of New York to work for some time at one of the hospitals of that city.

The São Paulo Association of Medicine and the São Paulo chapter of the Brazilian College of Surgeons have recently held a joint meeting to honor the memory of Dr. Sergio Paiva Meira, anatomist and surgeon, who was one of the leading professors at the University of São Paulo. At this meeting Dr. Sebastião Hermeto, Dr. Eurico S. Bastos and Dr. Orlando Aidar spoke in praise of the medical achievements of the late Professor Meira.

Dr. João Bicudo Junior, associate professor of dermatology at the University of São Paulo and past president of the Section of Dermatology of the Paulista Medical Association, has been appointed head of the outpatient department of the Division of Dermatology and Syphilology of the Santa Casa Hospital. Dr. Bicudo succeeds Dr. Aguiar Pupo, a leading dermatologist of this city.

Dr. Ciro Rezende, ophthalmologist, of São Paulo, has been elected member of the local chapter of the Brazilian College of Surgeons. Dr. Rezende is associate professor of ophthalmology at the University of São Paulo.

SWITZERLAND

(From Our Regular Correspondent)

GENEVA, Nov. 14, 1945.

Mental Hygiene in Switzerland

There is a great increase in interest in Switzerland toward all questions of mental hygiene. In many towns, offices called "Offices médicaux pédagogiques" have been created to assist the "problem child." A series of lectures is given annually by the Institute of the Sciences of Education of the University of Geneva. The last series was specially concerned with the problem of intelligence. Dr. Brantmay spoke on the importance of intelligence and how great a problem it is in mental hygiene. Dr. F. Rilliet, the Geneva school doctor, spoke on the illnesses that could endanger the intellectual development of children. Professor G. de Morsier gave a lecture on "intelligence and the brain" and Professor F. Morel, director of the psychiatric clinic of Geneva, spoke on intelligence in psychiatry.

Swiss Physicians for the Current Year

Medical students in Switzerland at present total 2,608. Of these 2,295 are Swiss and 313 are foreigners. Students who have just graduated number 233, of whom 34 were women. The total number of Swiss doctors is 4,073, to which can be added 1,443 assistants. There is 1 physician for 1,171 inhabitants. In a town it amounts to 1 physician for 668 inhabitants. Of the total number of physicians 1,634 are specialists. There are now 142 physicians in practice who are between 71 and 75 years of age, 66 physicians who are between 76 and 80 years of age, and 26 who are more than 81. In 1938 the figures were 100, 38 and 16 respectively for these older age groups.

Medical Consultative Commission of International Red Cross

The Medical Consultative Commission of the International Red Cross Committee, composed of physicians and one nurse, was created in 1943 with the aim of centralizing medical data coming from all countries, particularly those concerning the medicaments and sanitary material. It also provided help of medical or prophylactic character to the officers of prisoner of war or civil internment camps. From numerous national organizations this commission receives important documentation on the health conditions of the world population, on the different illnesses and on the development of epidemics. It encourages the numerous national Red Cross organizations to create qualified medical personnel. It has organized special courses for Swiss physicians on the prophylaxis and the campaign against numerous epidemics. In Switzerland 198 physicians, 211 nurses and 69 technicians are at the disposal of the commission. Thus a specialized personnel from a neutral country can start immediately to an epidemic area, collect the necessary data, give prompt advice as to what methods of help can be used and transmit as quickly as possible the necessary material from the stocks of the International Red Cross Committee.

Marriages

ARNOLD JOSEPH CERASOLI, New York, to Miss Concettina Yolanda Magri of Mount Vernon, N. Y., November 10.

JAMES T. CARROLL, Fulton, N. Y., to Miss Lucille Jeannette Butter of Richfield, N. J., in Bogota, N. J., August 25.

ROBERT CALVIN BROWNLEE JR., Due West, S. C., to Miss Jewel Pharr in Charlotte, N. C., October 18.

SELMAR BURCHART to Miss Katherine Hawks, both of Memphis, Tenn., October 10.

IRVING CRAMER, Utica, N. Y., to Miss Helen Rubin of Albany, October 6.

Deaths

Charles Fletcher Davis ♂ Colonel, M. C., U. S. Army, retired, Parsons, Kan.; born in Arlington, Ore., May 20, 1888; University of Oklahoma School of Medicine, Oklahoma City, 1914; Army Medical School, Advanced Course, in 1932, and Medical Field Service School, Advanced Course, in 1936; fellow of the American College of Surgeons and the American Public Health Association; received the degree of master of public health at Johns Hopkins University School of Hygiene and Public Health in 1940; served overseas during World War I; entered the medical corps of the U. S. Army as a first lieutenant in 1920; rose through the various grades to that of colonel; trained more than twenty general and other hospitals for overseas duty in the various theaters during World War II and served overseas in North Africa as the commanding officer of the 21st General Hospital; retired Jan. 1, 1945 after having served twenty-five years in hospitals of the U. S. Army; superintendent of the Parsons State Hospital; died suddenly, July 26, aged 57, of coronary thrombosis.

James Wilkinson Jervey ♂ Greenville, S. C.; Medical College of the State of South Carolina, Charleston, 1897; born in Charleston, S. C., Oct. 19, 1874; honorary member and twice president of the South Carolina Medical Association; president of the South Carolina Ophthalmological and Otolaryngological Society, 1922-1923; past president of the Greenville County Medical Society; president of the American Laryngological, Rhinological and Otolological Society, 1933-1934, serving twice as chairman of its southern section; served as chairman of the section on ophthalmology and otolaryngology, for many years on the council and in 1937-1938 as president of the Southern Medical Association; member of the American Ophthalmological Society; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; medical director of Dr. Jervey's Private Hospital; formerly editor of the *Journal of the Medical Association of South Carolina*; died November 1, aged 71.

Robert Henry Ferguson ♂ Orange, N. J.; University of Vermont College of Medicine, Burlington, 1898; born in Boston, Nov. 4, 1857; member of the Massachusetts Medical Society and the American Association for the Advancement of Science; fellow of the American Society of Anesthetists, New York Society of Anesthetists, Interstate Association of Anesthetists, Pacific Coast Association of Anesthetists, Society of Anesthetists of Great Britain, Canadian Society of Anesthetists, Royal Society of Medicine, London, England, and the New York Academy of Medicine; associate member of the Southern Association of Anesthetists; served as chief of the medical department and the department of anesthetics, E. R. Squibb & Sons; devised an inhaler for etherization by the open drop method; died August 30, aged 87, of myocarditis.

James Philip Boylan ♂ New York; Columbia University College of Physicians and Surgeons, New York, 1927; born in Brooklyn, Sept. 1, 1895; assistant clinical professor of obstetrics and gynecology at the New York Medical College, Flower and Fifth Avenue hospitals; diplomate of the National Board of Medical Examiners; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; fellow of the American College of Surgeons; served during World War I; on the staffs of the New York City Hospital, House of Detention for Women, Vanderbilt Clinic and St. Clare's Hospital, where he died September 25, aged 50, of carcinoma of the larynx.

Mills Sturtevant ♂ New York; Columbia University College of Physicians and Surgeons, New York, 1908; born in Whitfield, N. H., April 7, 1882; professor of clinical medicine at the New York University College of Medicine; member of the American Gastro-Enterological Association and the International Gastro-Enterological Association; fellow of the American College of Physicians; specialist certified by the American Board of Internal Medicine; served on the staff of the Bellevue Hospital and the Rockaway Beach (N. Y.) Hospital; died in the Harkness Pavilion, Columbia-Presbyterian Medical Center, October 29, aged 63, of pneumonia.

Clifford Evan Howard, Ogdensburg, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1928; born in Gananoque, Ont., in 1905; member of the American Psychiatric Association; interned at the Royal Victoria Hospital in Montreal, Que.; formerly staff physician and surgeon at St. Lawrence Lumber Company in Trinity Bay, Que.; a member of the psychiatric staff of the Binghamton State Hospital in Binghamton from 1932 to 1942, when he became clinical director at the St. Lawrence State Hospital, a position he held at the time of his death on August 10, aged 40, of uremia.

Charles Lee Beeching ♂ Surgeon, Lieutenant Commander, U. S. Navy, retired, Kansas City, Mo.; University Medical College of Kansas City, 1908; entered the U. S. Navy on Oct. 3, 1911; retired June 30, 1937; recalled to active duty 1940, later retired because of illness; died August 29, aged 63, of coronary occlusion and hypertrophic arthritis.

William C. Boteler, Minneapolis; University of Maryland School of Medicine, Baltimore, 1878; died September 17, aged 90, of bronchopneumonia, arteriosclerosis and encephalopathy.

Robert Lester Botkin ♂ Duquesne, Pa.; University of Pittsburgh School of Medicine, 1919; director of the city bank; died September 24, aged 50, of coronary occlusion.

Oliver J. Caza ♂ Skowhegan, Maine; M.B. in 1905 and M.D. in 1907, School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal; past president of the Somerset County Medical Society; served as town and school physician; on the staff of the Redington Memorial Hospital; for twenty-five years house physician for the State Reformatory for Women; died in the New England Baptist Hospital, Boston, October 25, aged 64, following an operation for carcinoma.

John Grigsby Clem, Louisville, Ky.; Hospital College of Medicine, Louisville, 1903; member of the American Medical Association; served during World War I; died in St. Joseph Infirmary September 28, aged 65, of coronary occlusion.

Frederick Stephens Cole, Inlet, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1890; health officer; formerly member of the state legislature; served during World War I; died in Buffalo September 12, aged 80, of carcinoma of the bladder.

John Joseph Connolly, Louisville, Ky.; University of Louisville Medical Department, 1906; served as coroner and deputy coroner; died in SS Mary and Elizabeth Hospital September 11, aged 73, of hypertension.

Charles Johnston Davis ♂ Deerfield, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; served in the medical corps of the U. S. Army during World War I; formerly health commissioner; on the staff of the Highland Park (Ill.) Hospital; president of the Deerfield State Bank; died September 15, aged 70, of hypertension and hemiplegia.

Raymond del Mas, Hugo, Minn.; Dunham Medical College, Chicago, 1901; Hering Medical College, Chicago, 1903; died in San Francisco September 16, aged 74.

Charles W. Denny, North Madison, Ind.; University of Louisville (Ky.) Medical Department, 1893; member of the American Medical Association; honorary member of the Indiana State Medical Association; on the staff of the King's Daughters' Hospital in Madison, where he died September 26, aged 77, of coronary thrombosis and diabetes mellitus.

James Louis Early ♂ Radford, Va.; University College of Medicine, Richmond, 1901; past president of the Southwestern Virginia Medical Association; member of the American Medical Association; died September 1, aged 68.

John Thomas Eckert, Allentown, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1903; member of the American Medical Association; on the staff of the Sacred Heart Hospital, where he died September 13, aged 68, of generalized carcinomatosis.

Robert M. Elliott, Canandaigua, N. Y.; University of Buffalo School of Medicine, 1890; member of the American Medical Association and the American Psychiatric Association; formerly associate clinical professor of mental diseases at the Long Island College Hospital; for many years superintendent of the Willard (N. Y.) State Hospital; formerly junior assistant physician at the Rochester State Hospital; at one time affiliated with the Brooklyn State Hospital; died October 5, aged 82, of coronary thrombosis.

Toivo Johannes Forsstrom, Astoria, Ore.; Helsingfors Universitet Medicinska Fakulteten, Helsingfors, Finland, 1897; died August 16, aged 78.

Frank Durkee German ♂ Pontiac, Mich.; Detroit College of Medicine, 1906; served during World War I; examining physician for the draft board during World War II; on the staff of the Pontiac General Hospital; died September 26, aged 65, of carcinoma of the rectum.

Joseph Shem Gian-Franceschi ♂ Buffalo; University of Buffalo School of Medicine, 1908; specialist certified by the American Board of Radiology, Inc.; member of the Radiological Society of North America, Inc., and the American College of Radiology; secretary and past president of the Buffalo Radiological Society; member of the staffs of the Emergency and Columbus hospitals; an associate staff member of the Lafayette General Hospital; died October 17, aged 61, of cerebral hemorrhage and chronic nephritis.

Carlyle Newton Haines ♂ Athens, Pa.; College of Physicians and Surgeons, Baltimore, 1908; specialist certified by the American Board of Urology, Inc.; past president of the Bradford County Medical Society; member of the American Urological Association; fellow of the American College of Surgeons; served during World War I; formerly associated with the Guthrie Clinic and for many years on the staff of the Robert Packer Hospital in Sayre; died September 22, aged 59, of coronary occlusion.

William Joseph Harkins, Quincy, Mass.; University of Vermont College of Medicine, Burlington, 1911; member of the American Medical Association and the New England Otological and Laryngological Society; served overseas during World War I; for many years on the staffs of the Massachusetts General Hospital and the Massachusetts Eye and Ear Infirmary in Boston; served as consultant at the Quincy City, Weymouth (Mass.), Milton (Mass.) and other hospitals; died August 25, aged 59.

Grace Frith Hagans Jerger, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; died September 18, aged 66.

Audley Clark Joslyn, Portland, Ore.; University of Oregon Medical School, Portland, 1928; captain, medical reserve corps, U. S. Army, not on active duty; died August 29, aged 49, of pulmonary hypertension with heart disease.

Henry Randal Kenny, Chicago; University of Dublin School of Physic, Trinity College, Dublin, 1909; member of the American Medical Association; on the staffs of the Illinois Masonic Hospital, Columbus Hospital and the Alexian Brothers' Hospital, where he died September 9, aged 59.

Frederick C. Liddle ♂ Dorset, Vt.; University of Vermont College of Medicine, Burlington, 1887; honorary member of the Vermont Medical Society; past president and vice president of the Bennington County Medical Society; honorary president of the Dorset Memorial Library; died September 17, aged 84, of pneumonia following a fractured rib received in a fall.

Edward Frank Marsh ♂ White Plains, N. Y.; Albany (N. Y.) Medical College, 1882; died September 4, aged 86, of carcinoma of the stomach.

Walter Bruce Maxwell, Nesbitt, Miss.; Louisville (Ky.) Medical College, 1874; for many years postmaster; died September 20, aged 93.

Bernard Vincent McCabe, Helena, Mont.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; served as president of the Lewis and Clark County Medical Society; died in St. John's Hospital in August, aged 73.

James M. McGeorge, Salem, Ohio; University of Wooster, Wooster, Ohio, 1902; member of the American College of Surgeons; served during World War I; on the staff of the Salem City Hospital, where he died September 1, aged 70, of generalized arteriosclerosis.

John Dickinson Milburn, East Hampton, Conn.; the Hahnemann Medical College and Hospital, Chicago, 1910; served as health officer and medical examiner; on the staff of the Middlesex Hospital, Middletown; died September 17, aged 64, of coronary thrombosis.

Willis Moore, Vermont, Ill.; Chicago Medical College, 1890; died August 16, aged 82.

I. J. Morris, Dallas, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1905; died in Chicago August 18, aged 63.

Robert Shibley Moth, Council Bluffs, Iowa; the Hahnemann Medical College and Hospital, Chicago, 1905; served overseas during World War I; on the staff of the Jennie Edmundson Hospital, where he died August 27, aged 63, of carcinoma of the colon.

James Kay Newman, Omaha; Universidad Nacional Facultad de Medicina, Mexico, D. F., 1879; member of the American Medical Association; honorary member of the Nebraska State Medical Association; died in St. Joseph Hospital October 5, aged 96, of bronchogenic carcinoma.

Lewis Beauregard Newsom, West Monroe, La.; Memphis (Tenn.) Hospital Medical College, 1891; member of the American Medical Association; served on the staff of St. Francis Sanitarium, Monroe; died in Shreveport recently, aged 83, of senility.

Francis LeJau Parker ♂ Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1909; professor of chemistry at his alma mater, where he had served for a period as dean; died in Hendersonville, N. C., August 20, aged 69, of coronary disease.

Herman Frederick Schrader, Browning, Mont.; Jefferson Medical College of Philadelphia, 1910; member of the American Medical Association; served as vice president of the North Central District Medical Association; city health officer; affiliated with the Indian Service and physician in charge of the Blackfeet Hospital; died in the Deaconess Hospital, Great Falls, August 23, aged 65, of heart disease and cerebral hemorrhage.

John King B. E. Seegar Sr., Baltimore; Baltimore Medical College, 1900; member of the American Medical Association; fellow of the American College of Surgeons; gynecologist, St. Agnes' and Bon Secours hospitals; associate in gynecology at the Maryland General Hospital; died in the Johns Hopkins Hospital August 24, aged 76, of carcinoma of the stomach.

Gustav Maxim Steinbach ♂ Brooklyn; University of Aberdeen Faculty of Medicine, Scotland, 1933; interned at the Montefiore Hospital for Chronic Diseases in New York; served a residency and as a member of the staff of the Jewish Hospital; died August 30, aged 42, of coronary disease.

Claude Earl Stump, Kansas City, Mo.; University of Kansas School of Medicine, Lawrence and Kansas City, 1906; served as police surgeon and on the staff of the Ralph Sanitarium; died August 26, aged 63.

John Francis Swarens, Kansas City, Mo.; National Normal University College of Medicine, Lebanon, Ohio, 1892; Kentucky University Medical Department, Louisville, 1899; Southwestern Homeopathic Medical College and Hospital, Louisville, Ky., 1900; died August 23, aged 78, of coronary occlusion.

Alfred Charles Taylor, Mona, W. Va.; Chicago College of Medicine and Surgery, 1916; member of the American Medical Association; died in a hospital at Morgantown October 25, aged 67, of cerebral hemorrhage.

Frederick William Taylor, Baltimore; University of Maryland School of Medicine, Baltimore, 1884; formerly society editor of the *Sunday Sun*; died in the Johns Hopkins Hospital August 16, aged 83.

Frank C. Tinsley, Indianapolis; Central College of Physicians and Surgeons, Indianapolis, 1891; on the staff of the Methodist Hospital; died August 23, aged 81, of septic cystitis.

Newton Murray Tucker, Nashville, Tenn.; University of Tennessee Medical Department, Nashville, 1898; veteran of the Spanish-American War; died August 15, aged 74, of heart disease.

Smith Lanier Turner, Williston, Fla.; Atlanta College of Physicians and Surgeons, 1911; health officer of Levy County; died in Ocala, August 2, aged 59, of acute dilatation of the heart following an operation for gangrenous gallbladder.

George G. Van Mater, Peru, Ind.; New York Homeopathic Medical College and Hospital, New York, 1892; served during World War I; died in the Dukes-Miami County Memorial Hospital August 28, aged 82, of carcinoma.

Oscar Clinton Wainscott, Peru, Ind.; University of Louisville (Ky.) Medical Department, 1893; Bellevue Hospital Medical College, New York, 1896; served as medical examiner for the Miami County Draft Board during World War I; formerly president and chairman of the board of directors of the Wabash Valley Trust Company; died September 3, aged 75, of carcinoma of the prostate.

Edwin Bernard Weldon ♂ Bridgeport, Conn.; College of Physicians and Surgeons, Baltimore, 1913; specialist certified by the American Board of Pediatrics, Inc.; member of the American Academy of Pediatrics; attending pediatrician at Englewood Hospital and St. Vincent's Hospital, where he died August 11, aged 54, of coronary thrombosis.

Paul Whelan ♂ Seattle; University of Pennsylvania School of Medicine, Philadelphia, 1915; on the staffs of the King County and Doctors hospitals; died August 28, aged 58, of carcinoma of the stomach.

William Shipman Wiggins ♂ Exeter, Neb.; Michigan College of Medicine and Surgery, Detroit, 1895; past president of the Fillmore County Medical Society; for many years president of the board of education in Exeter and surgeon for the Burlington and the Chicago and Northwestern railroads; on the staff of the Lutheran Hospital in York; died August 19, aged 75.

Alexander E. Wilcox, Adrian, Mich.; Saginaw Valley Medical College, Saginaw, 1900; died August 3, aged 75.

William Lewis Yeomans, Bucyrus, Ohio; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1897; member of the American Medical Association; on the staff of the Bucyrus City Hospital; died August 30, aged 71, of arteriosclerosis.

Jerome Edward Young, Troy, N. Y.; Albany Medical College, 1896; died in the Troy Hospital August 10, aged 71, of pulmonary edema and chronic myocarditis.

DIED WHILE IN MILITARY SERVICE

Lawrence Benjamin * Chicago; Loyola University School of Medicine, Chicago, 1929; interned at St. Francis Hospital; commissioned a captain in the medical corps, Army of the United States, on Nov. 17, 1943; died Nov. 27, 1944, aged 44.

Richard Booth Jr., Lynchburg, Va.; University of Virginia Department of Medicine, Charlottesville, 1943; interned at the Virginia Mason Hospital in Seattle; began active duty as a first lieutenant in the medical corps, Army of the United States, on Jan. 2, 1944; died in Germany May 12, aged 28, of injuries received in an airplane crash.

Arthur Smith Dutton, Indiana, Pa.; Western Reserve University School of Medicine, Cleveland, 1938; member of the American Medical Association and the Ohio State Medical Association; interned and served as assistant resident in surgery at Cleveland City Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, in March 1941; served as executive officer of the Station Hospital, Fort Knox, Ky.; promoted to captain and major; in August 1943 went to North Africa with the 118th Field Hospital; promoted to lieutenant colonel; later transferred to the 24th General Hospital and stationed in Italy; died in the 64th General Hospital, in northern Italy, July 17, aged 37, of exfoliative dermatitis and acute nephritis.

Irving Fagin, New York; St. Louis University School of Medicine, 1939; diplomate of the National Board of Medical Examiners; interned at the Beth David Hospital; began active duty on June 26, 1941, as a first lieutenant in the medical corps, Army of the United States; promoted to captain; died in the Southwest Pacific area Sept. 18, 1944, aged 28.

William Duncan Frostic, Wyandotte, Mich.; University of Michigan Medical School, Ann Arbor, 1937; member of the American Medical Association; formerly an intern and resident in surgery at the Harper Hospital in Detroit; served a residency in medicine at the Pontiac General Hospital in Pontiac; began active duty as a first lieutenant in the medical corps, Army of the United States, on Oct. 24, 1941; promoted to captain on June 21, 1943; flight surgeon with the American Air Forces; overseas since March 1945; killed July 30, aged 34, when his plane crashed while on a routine flight from a U. S. Army Base at Oahu, Hawaii.

William Hildreth Gillespie, New York; Columbia University College of Physicians and Surgeons, New York, 1938; diplomate of the National Board of Medical Examiners; served an internship, assistant residency and fellowship at the Presbyterian Hospital; began active duty as a captain in the medical corps, Army of the United States, on Feb. 15, 1942; promoted to major in September 1944; served in the United States and overseas in the Belgian Congo, Casablanca, Oran and France, with the Presbyterian Hospital Unit, the 23d Station Hospital, the 237th General Hospital and the 23d General Hospital; died in France June 7, aged 32, of acute infectious hepatitis with jaundice.

Thomas Herbert Greenway * Three Rivers, Mass.; Tufts College Medical School, Boston, 1927; interned at the Eastern Maine General Hospital in Bangor, Maine; served as a member of the board of health and as associate medical examiner; member of the staff of the Wing Memorial Hospital in Palmer; major, medical corps, Army of the United States; shortly after entering the service was sent to the South Pacific as medical officer with an amphibious engineers' unit; at Lae was named for conspicuous heroism; died in the Cushing General Hospital, Framingham, June 23, aged 44, of carcinoma of the rectum with metastasis to the liver.

Leonard Watson Hassett * Colonel, M. C., U. S. Army, Washington, D. C.; Tufts College Medical School, Boston, 1910; Army Medical School in 1922; became a lieutenant in the National Guard in 1912 and served as a captain during World War I; entered the medical corps of the U. S. Army as a captain on July 1, 1920; rose through the various grades to that of colonel; commanding officer of the Station Hospital, Camp Pickett, Blackstone, Va.; fellow of the American College of Surgeons; at one time served on the faculty of the University of Vermont College of Medicine in Burlington; died in the Woodrow Wilson General Hospital, Staunton, Va., July 25, aged 58, of coronary thrombosis.

Charles George Hutter * Colonel, M. C., U. S. Army, Santa Barbara, Calif.; Northwestern University Medical School, Chicago, 1913; fellow of the American College of Surgeons; Army Medical School in 1916 and the advanced course at the Medical Field Service School in 1934; entered the medical reserve corps of the U. S. Army as a first lieutenant in March 1916; vacated in June 1916 and entered the medical corps of the regular army in the same rank; served with the third division overseas during World War I; promoted through the various ranks to that of colonel; formerly liaison officer, Office of the Surgeon General, U. S. Army, to the American Medical Association; died in the Hoff General Hospital June 26, aged 59, of hypopharyngeal hemorrhage due to carcinoma of the hypopharynx.

Edgar Shugert Ingraham, Mercer, Pa.; Western Reserve University School of Medicine, Cleveland, 1935; member of the American Medical Association and the American Association of Pathologists and Bacteriologists; specialist certified by the American Board of Pathology, Inc.; interned at the Presbyterian Hospital in Philadelphia; interned and served a residency at the University Hospitals in Cleveland; commissioned a first lieutenant in the medical corps, Army of the United States, on Sept. 10, 1941; promoted to captain on Nov. 9, 1942 and major on July 26, 1944; chief of laboratory services in the 142d Base Hospital at Calcutta, India; killed in India August 6, aged 34, in an airplane crash.

Levy Stephen Johnson * Colonel, M. C., U. S. Army, Washington, D. C.; University of Texas School of Medicine, Galveston, 1912; Army Medical School in 1918 and postgraduate course in 1935; School for Flight Surgeons in 1920; began active duty as a first lieutenant in the medical corps of the U. S. Army on June 28, 1917; rose through the various grades to that of lieutenant colonel on July 28, 1937; promoted to the temporary rank of colonel on Oct. 31, 1942; died in Camp Barkeley, Texas, Jan. 8, 1943, aged 56, of heart disease.

Richard Paul Morden, Jefferson, Iowa; State University of Iowa College of Medicine, Iowa City, 1934; member of the American Medical Association; interned at the Mercy Hospital in Des Moines; commissioned a first lieutenant in the medical corps, Army of the United States, on July 30, 1942; promoted to captain; arrived in England in June 1943; died near Cambridgeshire, England, May 18, aged 39, of subarachnoid hemorrhage.

Robert John Rosenheimer, Kewaskum, Wis.; Marquette University School of Medicine, Milwaukee, 1943; interned at the Milwaukee County Hospital, where he served a residency in pathology; commissioned a first lieutenant in the medical corps, Army of the United States, in 1944; died in a hospital at Washington, D. C., July 16, aged 28, of tumor, argentaffine type, malignant, primary in the cecum, with metastasis to the bladder and ureters.

Henry Sutherland-Campbell, Los Angeles; McGill University Faculty of Medicine, Montreal, Que., Canada, 1920; associate clinical professor of medicine (dermatology) at the University of Southern California School of Medicine; member of the American Medical Association; specialist certified by the American Board of Dermatology and Syphilology; on the staffs of the Good Samaritan and St. Vincent's hospitals; commissioned a major in the medical corps, Army of the United States, on Sept. 8, 1942; died July 7, aged 55.

Robert Emery Trekel, Wellington, Kan.; University of Kansas School of Medicine, Lawrence and Kansas City, 1944; an acting assistant surgeon lieutenant (jg) in the U. S. Navy while he served an internship at the Naval Hospital in Farragut, Idaho; lieutenant (jg) in the medical corps, U. S. Naval Reserve; died in the Pacific area April 22, aged 25, of accidental acute therapeutic poisoning.

Thomas Loftin Weber * Olney, Ill.; Washington University School of Medicine, St. Louis, 1937; interned at the University Hospital in Baltimore and served a residency in pediatrics at St. Louis Children's Hospital in St. Louis; began active duty as a first lieutenant in the medical corps, Army of the United States, on Nov. 12, 1942; promoted to captain on Feb. 5, 1944; accidentally killed September 4, aged 34, while making a routine parachute jump at the Army Air Base at Watertown, S. D.

Correspondence

INJECTIONS OF DISTILLED WATER

To the Editor:—I should like to comment on your answer to an inquiry regarding the usefulness of injections of distilled water (*THE JOURNAL*, Oct. 20, 1945, p. 584).

You state that "there appears to be no basis for preference for water over isotonic solution of sodium chloride." I can think of at least three conditions in which this statement would not apply and, indeed, might even lead to danger. First, water is preferable in any condition in which there is deprivation of water alone, e. g., for a patient who is unable to replace water lost as insensible perspiration and from the lungs. This leads to dehydration, which involves some loss of electrolyte, but in general is associated with a retention of salt, or hypertonicity of the body fluids. True replacement therapy in such a case would consist in the injection of water with only a small amount of electrolyte. For such purposes a hypotonic solution of sodium chloride, preferably in 5 or 10 per cent glucose solution, should be employed. While it is true that an isotonic saline solution might correct dehydration in such a patient, it would be necessary to provide for the excretion of the excess salt; otherwise the excess might easily provoke deleterious results. For example, if the patient needed 3 liters of water and, say, 5 Gm. of sodium chloride, the use of isotonic saline solution would introduce 27 Gm. of sodium chloride, of which 22 is excessive and which would provoke difficulty if the kidneys were unable to excrete it. Such a situation occurs not infrequently after severe operations, when renal function may be temporarily impaired and adrenal function accelerated. These patients lose water through the lungs and through other insensible channels, which requires replacement, but unless there has been vomiting or similar occurrence water alone is needed. In such cases the injection of much isotonic solution of sodium chloride has actually been shown to be deleterious.

A third condition in which isotonic solution of sodium chloride may provoke difficulty as compared with water without electrolyte is water deprivation in severe malnutrition with hypoproteinemia. In such a case the injection of isotonic solution of sodium chloride has been shown frequently to lead to so-called salt edema. While distilled water alone is rarely injected, 5 or 10 per cent glucose solutions without electrolyte is the usual method employed for the introduction of pure water. In this way an isotonic or slightly hypertonic solution enters the blood stream, after which the glucose is rapidly burned, leaving water itself.

These considerations, among others, emphasize the importance of distinguishing carefully between the need for water and the need for sodium chloride. The need for each or both must depend on the circumstances in the individual case. More important is the well established fact that excessive sodium chloride, unlike excessive water, is much more likely to prove deleterious and thus defeat the objectives of such parenteral injections.

ROBERT ELMAN, M.D., St. Louis.

CURARE THERAPY

To the Editor:—May I point out that the paper of Dr. Harold R. Griffith "Curare and Anesthesia," which was published in *THE JOURNAL*, March 17, is incomplete in its history of the use of the drug. He states that "clinicians had more than once cast hopeful eyes toward the possible use of curare in the treatment of spastic disease of the muscles but always its poisonous reputation and the presence of cardiac depressants and other adulterants in the available supplies made clinical trial seem too dangerous." This statement may have been true with specimens of curare antedating the use of the curare which was

biologically assayed for me by Merck & Co. and used in many cases of spastic paralysis and allied conditions such as dystonia.

The first paper, "Curare Therapy for the Release of Muscle Spasm and Rigidity in Spastic Paralysis and Dystonia Musculorum Deformans," was published in the *Journal of Bone and Joint Surgery* in July 1938. A second study, "Therapeutic Use of Curare and Erythroidine Hydrochloride for Spastic and Dystonic States," was printed in the *Archives of Neurology* in February 1939. A third, "Clinical Experiences with Some Curare Preparations and Curare Substitutes," appeared in the *Journal of Pharmacology and Experimental Therapeutics* in June 1940, and, lastly, a summary of "Observations in Spastic Paralysis and Dystonia Musculorum Deformans" was read before the Boston Society of Psychiatry and Neurology on Oct. 20, 1938 and published in the *Journal of Nervous and Mental Disease* in June 1939.

These studies represent the first extensive use of curare with an assayed preparation.

I note also that the Council on Pharmacy and Chemistry has accepted the Squibb preparation of curare (*THE JOURNAL*, October 13). This preparation is an excellent one. I think it an error, however, to accept the trade name of the product. A similar policy, I believe, should be applied to all drugs to avoid confusing nomenclature.

MICHAEL BURMAN, M.D., New York.

USE OF GROUP O BLOOD IN TRANSFUSION

To the Editor:—In reply to a recent query concerning the use of A and B group substances to render group O blood safe for use for recipients of all blood groups, the statement was made that there is still no direct evidence establishing the efficacy of the group substances *in vivo*, when used in this way (*THE JOURNAL*, Nov. 17, 1945, p. 840). Our purpose in this communication is to describe briefly some recent experiments which supply this direct evidence.

Group B plasma having a very high titer of anti-A agglutinins was obtained from a blood donor who had been immunized by an injection of soluble group substances. The titer of the anti-A agglutinin for A₂ cells by the well slide method reached as high as 2,500 units (equivalent to 10,000 units by the tube technic or about two hundred times the average normal titer) but had fallen to a titer of 500 units by the slide technic by the time the plasma was collected from the donor some three months after the injection. A thousand cubic centimeters of this plasma was obtained at one time by withdrawing 1,800 cc. of blood from the donor and simultaneously replacing it with an equal volume of group B bank blood. As little as 25 cc. of the untreated plasma caused a frank hemolytic reaction in a voluntary group A₁ recipient, manifested by hemoglobinuria, pain in the back and increased bilirubinemia. Fifty cc. caused an even more pronounced reaction. In a volunteer of group A₂, 25 cc. of the plasma caused no obvious reaction but 50 cc. gave rise to signs of hemolysis. All these recipients were secretors.

To test the efficacy of Witelsky's A and B group substances to counteract the harmful effect of the plasma in question, Eli Lilly's preparation was added to the plasma in the proportion of 10 cc. for every 250 cc. of plasma. One group A₁ and one group A₂ volunteer was then each given 250 cc. doses of the neutralized plasma, and neither one exhibited any obvious manifestation of hemolysis. Similar results were obtained in a larger series of cases using other plasma. These results will be published shortly in detail, when the experiments have been completed.

LESLIE H. TISDALL, Major, M. C., A. U. S.

DONALD M. GARLAND, Captain, M. C., A. U. S.

ALEXANDER S. WIENER, M.D., Brooklyn.

LESTER J. UNGER, M.D., New York.

DETERMINATION OF RH FACTOR

To the Editor:—For almost a year I have been doing Rh factor tests on obstetric patients. The last six months I have been doing them routinely. The Nebraska State Health Department began offering this service about a month ago without charge. In my opinion it is a very definite advance in obstetrics.

Another great step forward will have been taken when all newborn babies, especially girls, have an Rh factor determination done at once as a part of the American newborn routine care. If the infant's test is Rh negative it should be rechecked in about three months because blood characteristics are not well developed in the first few days of life. I believe that a concerted effort ought to be put forth by the American Medical Association and other legitimate channels of propaganda, with the hope that the Rh factor determination will become a standard routine.

Those acquainted with the Rh factor realize that if this procedure is carried out and the Rh factor of each individual is obtained, the error of giving the wrong blood in infancy and from then on may be avoided. This once accomplished, there will be much less danger of the first baby having erythroblastosis. Also in case of emergency there will be a much better chance of obtaining the proper blood promptly.

RALPH LUIKART, M.D., Omaha.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Simultaneous Application of Tight Bandaging and Heat to Arthritic Foot.—Mrs. Treptau was suffering from what she thought was a sprain of her right foot and on Aug. 27, 1941 she went for treatment to the Behrens Spa, Inc., a hospital incorporated under the laws of Wisconsin and having as full time employees several chiropractors and at least one doctor of medicine. She was examined by Dixon, a chiropractor employed by the Spa, who advised her that she needed "vertebra adjustments," several of which were given to her by Dixon and by Behrens, another chiropractor, until September 14. In the course of those so-called treatments the swelling and pain in the foot increased greatly. September 14, a roentgenogram was taken under Behrens' direction at the Spa, and "by palpation in combination with the x-ray he determined that she was suffering from arthritis." He then applied a circular bandage consisting of two pieces of tape about 18 inches long and 1½ inches wide, starting one piece of tape about the top of the instep and going around the instep twice, and the other piece of tape went the other way. While applying the tape he told his patient that she had a bone infection and to grind her teeth as he tied the bandaging "real tight." This caused the patient a great deal of pain. Behrens then ordered "diathermo heat treatments" applied immediately. Two such treatments were given on each of the two following days. After the first heat treatment the patient was put in bed at the Spa. On her repeated complaints that the bandaging was too tight and that the pain was too great, a physician employee at the Spa apparently loosened the tape somewhat at the top of the foot but not around it. When the subsequent heat treatments were given the circular bandage was still in place and unloosened around the foot. The patient complained continually of great pain and the foot began to swell. On the 16th, the foot became black and blue, was very painful, and was so swollen that it covered the upper part of the adhesive tape bandage. On the failure of nurses attending her to bring a "doctor" to alleviate her pain, she induced the nurses to take the tape off her foot. The next day she returned to her home and called Dr. Wheelihan,

a physician, in on the case. Dr. Wheelihan testified that when he first examined the patient he found the foot extremely swollen and very tender to touch, that this condition indicated a markedly impaired circulation, one of threatened gangrene which was the result of the impaired circulation. Just what the subsequent history of the case was the reported decision does not make clear except that at the time of the trial there was a loss of flexion and limitation in the foot, apparently a permanent condition.

The patient and her husband subsequently sued the defendant corporation, which operated the so-called Spa, for damages sustained by the patient as the result of alleged malpractice in the treatment rendered by the chiropractors employed by the Spa. On behalf of the plaintiffs three practicing physicians were called as witnesses, Dr. Wheelihan, who attended her after she left the Spa, and Drs. Werra and Nicely. Dr. Wheelihan testified that the probable and direct cause of the impaired circulation and the condition that he found when he first examined the patient was the constricting tape applied by chiropractor Behrens and the diathermic treatments ordered by Behrens while the tape was in place; that the treatment given was not in accord with the recognized proper practice of the community; that the combination of constricting bandage plus diathermy was not proper in any school or field of medicine; that a bandage constricts the circulation and heat tends to increase the circulation; that one or the other would have been proper, but not the combination; and that in his opinion such treatment and accentuation of the arthritic condition of the foot probably resulted in the present condition of the foot. The testimony of Drs. Werra and Nicely was to the same effect. The jury, in a special verdict, found that by the simultaneous bandaging and application of diathermic treatments the defendant failed to exercise the skill and care required by law and that failure was the cause of the disability suffered by the patient after treatment. The court accordingly entered judgment for the plaintiffs, and the defendant appealed to the Supreme Court of Wisconsin.

The defendant contended first that the trial court disregarded the well established principle of law that a physician is not liable for malpractice if he selects and uses one approved method of treatment although there may be testimony that if other expert witnesses had been treating the case they would have used another method or that the method employed was improper and that since there was testimony that the method employed by Behrens was a method of treatment recognized by the medical profession in that vicinity the defendant cannot be held guilty of malpractice. The trial court, however, said the court, consistently considered applicable the rule of law contended for by the defendant, as is exemplified in the following instruction it gave to the jury:

You are further instructed that if you find from all the credible evidence in the case that the school of medicine recognizes more than one method of diagnosis or treatment of the condition which affected the plaintiff's right foot, it [defendant] was not required, at its peril, to select one or the other of such methods and was at liberty to select either of said methods and may not be considered wanting in the required degree of care and skill merely because expert witnesses give their opinion that some other method would have been preferable.

Consequently, the defendant's contention in this respect cannot be sustained.

The defendant next contended that a verdict in a malpractice case must be based on expert testimony that there was malpractice present and that the malpractice proximately caused the condition complained of. That rule of law, answered the court, is correct but again it is evident from the record that the trial court rightly concluded and duly instructed the jury that the plaintiffs must prove to a reasonable certainty by expert testimony that there was malpractice present and that such malpractice proximately caused such damages as the jury assessed. The jury was free to accept in determining those issues either the expert testimony offered by the physicians who testified for the plaintiff or the testimony of the chiropractors in the defendant's employ.

The defendant contended further that there was no credible evidence adduced at the trial to sustain to a reasonable certainty the jury's finding that the use of the treatments in combination by Behrens was the cause of the increased ailments, disabilities and suffering, or that such increase, if any, was a natural and

probable result of such use of treatments by Behrens. The defendant claimed that there was testimony that the patient's ailments, disabilities and pain could have been caused by the arthritic condition which affected her foot and that the burden of proof resting on the plaintiff is not met by showing that the ultimate condition might also have been caused by Behrens' unskilful treatment; that there was no testimony that the bandages were applied in such a manner as to impair circulation of the foot; that the claim that a tight bandage would aggravate an arthritic condition has no basis on medical fact; and that in the absence of gangrene no injury could result from the application of a tight bandage. This argument of the defendant, said the court, cannot be sustained. The jury's findings as to the defendant's malpractice and that it caused increased ailments, disabilities and suffering and damages is warranted by the testimony of the three physicians called by the plaintiffs.

The defendant next contended that medical practitioners such as were the three physicians called by the plaintiffs are not competent to testify as to the degree of care and skill required to be used by a chiropractor in treating a patient, relying on *Nelson v. Dahl*, 174 Minn. 574, 219 N. W. 941, reading in part as follows:

When a patient selects one of the several recognized schools of treatment, he thereby adopts and accepts the kind of treatment common to that school; and the care, skill, and diligence with which he is treated, when that becomes a question in the courts of this state, must be tested by the evidence of those who are trained and skilled in that particular school of treatment.

The rule contended for, said the Supreme Court, is not applicable in view of the real issue in this case. Plaintiffs do not claim that there was malpractice on the part of the defendant while Behrens was engaged in the practice of chiropractic by chiropractic manipulations or adjustments of the spine. Instead, plaintiffs contend there was malpractice when he and his associates went beyond the practice of chiropractic and entered into the general field of the practice of medicine, by the application of the bandage to the foot and by giving in conjunction therewith the diathermo heat treatments, neither of which was the practice of chiropractic by chiropractic manipulation or adjustment of the spine. On the contrary, the application of the bandages and the heat treatments given in this case are part of the general practice of schools of medicine, and, in so far as there was thus an invasion of the general field of that practice, the methods thus used by defendant's employees in diagnosis and treatment were subject to the rules applicable in the practice of medicine and surgery. Consequently there was applicable in this case the rule that the considered opinion of a qualified member of the profession of medicine and surgery is competent and proper as to whether or not the treatment given constituted the required degree of care and skill which physicians in good standing in the community usually exercise. When there is such an invasion of the field of medicine by the treatment given, the rule, which confines the inquiry as to the required degree of a practitioner's skill and care to the rules and principles of chiropractic or the particular school of science or medicine to which he belongs, does not exclude the testimony of physicians of the other schools when that testimony bears on a point in relation to diagnosis or treatment as to which the principles of the schools do or should concur. When a chiropractor assumes to diagnose and to treat disease he must exercise the care and skill in so doing that is usually exercised by a recognized school of the medical profession. *Kuechler v. Volgmann*, 180 Wis. 238, 192 N. W. 1015.

The court also did not agree with a contention of the defendant that because it was a hospital and could not lawfully engage in the practice of medicine it could not be held liable for damages caused by malpractice in the performance of professional acts of its staff. In arriving at this conclusion the court quoted from 26 Am. Jur. p. 597, reading as follows:

A hospital conducted for private gain is liable to its patient for injuries sustained by him in consequence of the incompetency or negligence of a physician treating him at its instance, under a contract binding it to furnish him proper treatment. A physician so employed is not an independent contractor.

The judgment in favor of the patient and her husband was accordingly affirmed.—*Treptau v. Behrens Spa, Inc.*, 20 N. W. (2d) 108 (11's., 1945).

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examination of the National Board of Medical Examiners and the Examining Board in Specialties were published in *THE JOURNAL*, Dec. 22, page 1226.

BOARDS OF MEDICAL EXAMINERS

- ALABAMA:** Mar. 19-21. Sec. Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.
- ALASKA:** Juneau, March 5. Sec., Dr. W. M. Whitehead, Box 140, Juneau.
- ARIZONA:** * Phoenix, Jan. 4-5. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.
- CALIFORNIA:** * *Written*. Los Angeles, March 11-14. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.
- CONNECTICUT:** * *Examination*. New Haven, March 12-13. *Endorsement*. New Haven, March 26. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven.
- DISTRICT OF COLUMBIA:** * *Reciprocity*. Washington, March 11. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.
- IDAHO:** Boise, Jan. 15. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.
- ILLINOIS:** Chicago, Jan. 8-10. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.
- INDIANA:** Indianapolis, April 25-27. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.
- KENTUCKY:** Louisville, March 25-27. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.
- MAINE:** Portland, March 12-13. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.
- MICHIGAN:** * Detroit, March 26-28. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.
- MONTANA:** Helena, April 1-3. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.
- NEVADA:** Carson City, Feb. 4. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.
- NEW JERSEY:** Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.
- NEW MEXICO:** * Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.
- NEW YORK:** Jan. 28-31. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.
- NORTH CAROLINA:** *Reciprocity*. Raleigh, Jan. 16. Sec., Dr. Ivan Proctor, Raleigh.
- NORTH DAKOTA:** Grand Forks, Jan. 1. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.
- OHIO:** *Endorsement*. Columbus, Jan. 8. *Examination*. Columbus, March 19-22. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.
- OKLAHOMA:** * Oklahoma City, March 23. Sec., Dr. J. D. Osborn Jr., Frederick.
- OREGON:** * Jan. 23-26. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.
- PENNSYLVANIA:** Harrisburg, January. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.
- RHODE ISLAND:** * Providence, Jan. 3-4. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.
- SOUTH DAKOTA:** * Pierre, Jan. 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.
- TEXAS:** Austin, March 27-29. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.
- VERMONT:** Burlington, March or April 1946. Sec., Dr. F. J. Lawliss, Richmond.
- WASHINGTON:** * Seattle, Jan. 14-16. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.
- WEST VIRGINIA:** Charleston, Jan. 7-9. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.
- WISCONSIN:** * Madison, Jan. 8-10. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.
- WYOMING:** Cheyenne, Feb. 4. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

- CONNECTICUT:** Feb. 9. Address State Board of Healing Arts, 250 Church St., New Haven 10.
- FLORIDA:** Gainesville, June 4. Final date for filing application is May 20. Sec. Dr. J. F. Conn, John B. Stetson University, DeLand.
- IOWA:** Des Moines, Jan. 8. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.
- MICHIGAN:** Ann Arbor and Detroit, Jan. 11-12. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.
- MINNESOTA:** Minneapolis, Jan. 2-3. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis 14.
- NEBRASKA:** Omaha, Jan. 8-9. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.
- OKLAHOMA:** Oklahoma City, Jan. 21. Sec., Dr. J. D. Osborn Jr., Frederick.
- OREGON:** Portland, March 2. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.
- RHODE ISLAND:** Providence, Feb. 13. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.
- SOUTH DAKOTA:** December. Sec., Dr. J. D. Alway, Aberdeen.

Current Medical Literature

AMERICAN

The Association Library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery 15:89-112 (Sept.) 1945

- Use of Aluminum in Silicosis Control. I. R. Taberslaw and B. D. Tebbens.—p. 89.
Erythroblastosis Fetalis, or Hemolytic Disease of the Newborn. M. V. Adams.—p. 93.
Lymphosarcoma of Appendix: Report of Case. W. E. Wilson.—p. 98.
Hospitals Now and Tomorrow. A. C. Bachmeyer.—p. 100.

15:113-148 (Oct.) 1945

- Alabama Doctor. W. H. Brantley Jr.—p. 113.
Prepayment Medical Care for State of Alabama. A. C. Jackson.—p. 126.
Marion Sims and Other 19th Century Pioneers: Dawn of Scientific Medicine and Surgery. S. Harris.—p. 128.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

54:217-328 (Sept.) 1945

- Electrocardiograph for Recording Heart Motion Utilizing Roentgenoscope. G. C. Henny and B. R. Boone.—p. 217.
Entrance of Pantopaque into Venous System During Myelography. C. L. Hinkel.—p. 230.
Osteogenic Sarcoma and Chondrosarcoma, with Special Reference to Roentgen Diagnosis. E. P. Pendergrass, J. O. Lafferty and R. C. Horn.—p. 234.
*Teratoma of Testis: Report of 65 Cases. J. L. Barner.—p. 257.
Atypical Esophageal Displacement with Left Atrial Dilatation, with Notes on Rheumatic Arthritis. B. S. Epstein.—p. 262.
Anomalous Right Subclavian Artery. B. Copleman.—p. 270.
Roentgenologic Diagnosis of Benign Tumors (Single Polyps) of Colon. F. J. Lust.—p. 276.
*Roentgen Irradiation in Treatment of Marie-Strümpell Disease (Ankylosing Spondylarthritis): Analysis of 160 Cases. J. E. Hemphill and R. J. Reeves.—p. 282.
Influence of Biologic Factors on Form of Roentgen Ray Survival Curves: Experiments on Paramecium Caudatum. A. Back and L. Halberstaedter.—p. 290.
Calculation of Radium Dosage Along Longitudinal Axis of Linear Sources. B. S. Wolfe.—p. 296.

Teratoma of Testis.—Barner reports 65 cases of teratoma of the testis treated within thirty-three months at an army general hospital. This was 2.62 per cent of all cases admitted to the genitourinary service and 7.86 per cent of all cases of cancer. The following factors have been suggested as contributory to the etiology of these malignant tumors: heredity, abnormal development, sexual activity, trauma, occupation, biochemical or endocrine changes and infections. Of these the most significant is probably abnormal development. The growth of this tumor is usually insidious and the patient may not be aware of it for some time. Painless swelling is the most frequent symptom. The testis usually retains its natural shape and outline. Early diagnosis is the most important factor in a high survival rate. Treatment should rely on surgery and postoperative irradiation. Orchiectomy and removal of the cord with the accompanying structures high at the internal abdominal ring are indicated in every case because it makes possible the removal of much of the lymphatic tract and contributes to the postoperative comfort of the patient. A remaining stub of the cord is not only a potential site for recurrence but is also tender and a source of irritation and discomfort. External high voltage roentgen therapy is begun as early as the third or fifth day after operation with 220 kilovolts, 15 milliamperes, 50 cm. target-skin distance, 0.5 to 1 mm. of copper plus 1 mm. of aluminum as filter and 47 to 32 roentgens per minute (measured in air). The number of fields irradiated depends on the presence or absence of metastases and the duration of symptoms before operation. Irradiation is given daily except Sundays.

The daily amounts of radiation are 200 to 250 roentgens to each of two fields, in rotation, until a total of 1,600 to 2,000 roentgens per field has been administered. Follow-up revealed that 7 of the 65 patients have died.

Roentgen Irradiation in Ankylosing Spondylarthritis.—Hemphill and Reeves present an analysis of 160 cases of Marie-Strümpell disease in which the pathologic picture is a true atrophic arthritis. The course is that of a progressive deforming arthritis unless correction and prevention of the deformities are instituted. During the earliest inflammatory stage of the disease roentgenograms may be negative. Forty-five degree angle roentgenograms may show changes about the articular facets of the vertebrae. The facets of the twelfth dorsal vertebra are frequently affected earlier than others. Usually the earliest detected changes are in the sacroiliac joints and consist of decalcification and irregular trabeculation in the subchondral bone immediately adjacent to the joint space, with haziness and apparent widening of the joint space. Of the 160 patients 137, or 86 per cent, were male. More than three fourths of the patients were between 20 and 39 years of age. Muscle spasm may exist for years before ossification of ligaments takes place. Roentgen therapy finds its greatest usefulness in allowing orthopedic treatment and correction of the deformities to be tolerated by the patient. During roentgen treatment, which employs 200 kilovolts at 30 to 50 cm. distance with a filter of 0.5 mm. of copper plus 1 mm. of aluminum, the spinal column is blocked off by lead shields in such a way that the lateral spinal ligaments are included in the beam. Two or three fields are treated every day or every other day with 150 roentgens in air to each field until a total of 450 or 600 roentgens has been applied per field. The series of high voltage roentgen treatments can be repeated at the end of six or eight weeks. The pathologic granulations of Marie-Strümpell disease are similar to the vascular granulations of other inflammatory reactions known to be radiosensitive. Whether or not roentgen therapy arrests this granulation before ankylosis develops cannot be answered. It is felt, however, that if roentgen therapy can be instituted while there is still active granulation (and not complete ankylosis) good results may be expected.

American Journal of Surgery, New York

70:1-136 (Oct.) 1945

- Established Surgical Infections: Treatment with Urea Sulfanilamide Mixture. C. W. Brown, L. A. McClintock and E. R. Neary.—p. 4.
Ligation of Supernumerary Ureter: Clinical and Experimental Study. A. E. Goldstein and B. Klotz.—p. 13.
Intervertebral Spine Fusion with Removal of Herniated Intervertebral Disk. J. M. Ovens and H. G. Williams.—p. 24.
Fracture of Zygomatic Bone and Arch Postoperative Headgear. A. A. Schmier.—p. 27.
Acute Suppurative and Gangrenous Cholecystitis. N. Blumberg and L. Zisserman.—p. 38.
Metatarsal March (Fatigue) Fractures. A. L. Leveton.—p. 49.
Chlorophyll and Adrenal Cortical Extract in Local Treatment of Burns. G. H. Collings Jr.—p. 58.
Esophageal Diverticulum. F. Bortone.—p. 64.
Modifications of Trocar Method with Positive Pressure for Instilling Amniotic Fluid Concentrate Intra-Abdominally at Close of Operations. H. J. Merkle.—p. 68.
Modification of Radical Operation for Cure of Ingrown Toenails. W. L. Sibley.—p. 79.
What Was Wrong with Whitehead's Work? Appraisal of His Rectal Operation. C. Eaton.—p. 83.

Archives of Physical Medicine, Chicago

26:549-602 (Sept.) 1945

- Dr. Simon Baruch and His Fight for Free Public Baths. T. E. Keys and F. H. Krusen.—p. 549.
Physiologic Fundamentals of Spa Therapy. J. Goldberger.—p. 558.
Spa Treatment of Rheumatic Diseases in United States. R. Kovacs.—p. 567.
*Challenge of Crutches: III. Standard Crutch Gaits and How to Teach Them. G. G. Deaver and Mary E. Brown.—p. 573.
Artificial Fever Chemotherapy: V. Induction Period. R. M. Craig, F. M. Buroker and G. N. Schwemlein.—p. 582.
Responsibility of Physical Therapist to Community. D. W. Gudakunst.—p. 590.

Crutch Gaits.—Deaver and Brown think that all crutch walkers should learn at least two gaits: a fast one to be used in the open, or in crossing a street, and a slow one for crowded places where space is limited but balance must be kept as slow progression is made. A patient should be taught as many

crutch gaits as he can master. He should know more than one, because each crutch gait requires a different combination of muscles, and a disabled person who becomes fatigued with one may change to another. Each crutch gait can be used as an exercise. The most elementary standard crutch gait consists in advancing one crutch, then the opposite foot, then the other crutch and finally the other foot. This four point alternate gait is a safe gait because there are always three points of support on the floor. It is a slow gait because weight must be constantly shifted. It does not require much space, so that it is a good gait to use in crowds or where space is limited. Once the four point alternate gait has been mastered, the subject may be taught next the two point alternate, which involves placing one crutch and the opposite foot down on the floor simultaneously, then the other crutch and the other foot simultaneously. This is no more than a speeding up of the four point alternate gait. This is a faster gait than the four point. The three point crutch gait is the one in which the two crutches and the weaker limb are placed on the floor simultaneously, then the stronger limb, which, being strong enough to support the weight of the body, needs no crutches. This gait is used by those having one lower extremity which cannot take full weight bearing and one which can support the whole body weight. The author describes the tripod crutch gaits and the swinging crutch gaits, also the rocking chair crutch gait and the amputation crutch gaits. The four point alternate and the two point alternate crutch gaits are taught to amputation subjects. The subject with artificial limbs is supported by his artificial limbs. He does not need the crutches for support. He needs them for balance. The aim is to use crutches at first for balancing purposes until the subject has "the feel" of his artificial limbs.

Endocrinology, Springfield, Ill.

37:157-222 (Sept.) 1945

- Plasma Protein Concentrations and Organ Weights of Rats on High Protein Diet. J. H. Leatham.—p. 157.
Effectiveness of Gonadotropin Injections Followed by Insemination in Inducing Pregnancy in Ewes. M. Koger.—p. 165.
Study of Hyaluronidase Effects on Follicle Cells of Ovulated Rat Ova. S. L. Leonard and R. Kurzrok.—p. 171.
Ultrafiltration of Urine for Collection and Biologic Assay of Excreted Hypophyseal Hormones. A. Gorbman.—p. 177.
*Effects of Pancreatectomy on Glycosuria and Ketosis in Dogs Made Diabetic by Alloxan. Elizabeth Thorogood and B. Zimmermann.—p. 191.
Effects of Alloxan in Birds. C. C. Scott, P. N. Harris and K. K. Chen.—p. 201.
Effect of Alcohol and Potassium Hydroxide Concentration on Reaction of 17-Ketosteroids with M-Dinitrobenzene. Hildegard Wilson and I. T. Nathanson.—p. 208.

Pancreatectomy and Alloxan Diabetic Dogs.—Thorogood and Zimmermann observed that, although glycosuria is more severe and the insulin requirement higher in alloxan treated than in pancreatectomized dogs, the former are able to live much longer without insulin treatment and fail to develop ketosis and diabetic coma. This has been confirmed by pancreatectomy in alloxan diabetic dogs following which the insulin requirement is less, but the animals pass quickly into coma when not controlled with insulin. One hypothesis suggests that there is secreted by the pancreas a second endocrine factor which acts to increase the blood sugar but to prevent ketosis in the insulin deficient animal. This hypothesis is a tentative one which seems to be the simplest explanation of the data, though it can be confirmed only by the actual preparation of an extract possessing these types of activity.

Florida Medical Association Journal, Jacksonville

32:107-166 (Sept.) 1945

- Acute Rheumatic Fever. J. E. Shay.—p. 135.
Modification of Tyding and Tynen Tonsil-Seizing Forceps. R. R. Killinger.—p. 137.
History of Medicine in Duval County: Part VI. W. Merritt.—p. 137.

32:167-214 (Oct.) 1945

- Successful New Method of Suspending Prolapsed Transverse Colon. M. Smith.—p. 191.
Benzedrine Sulfate Therapy for Urticaria in Children. S. J. Roberts.—p. 193.
Medicine in This Changing World. J. B. Quicksall.—p. 194.

Hawaii Medical Journal, Honolulu

5:7-40 (Sept.-Oct.) 1945

- Uterine Inertia and Postpartum Hemorrhage. L. T. Heywood.—p. 9.
*Spontaneous Complete Rupture of Normal Uterus During Late Pregnancy Before Onset of Labor. G. C. Milnor.—p. 12.
Continuous Caudal Anesthesia in Obstetrics. J. Herzlich.—p. 15.
Endocrine Therapy in Functional Uterine Bleeding. A. M. Faris.—p. 17.
Management of Breech Delivery. H. E. Bowles.—p. 19.
Present Status of Organotherapy in Essential Dysmenorrhea. E. R. Muntz.—p. 21.
Mammoplasty of Pendulous Breasts. C. E. Fronk.—p. 23.
Management of Occipitoposterior Positions. A. M. Faris.—p. 26.

Spontaneous Rupture of Uterus During Late Pregnancy.—Milnor reports the case of a primigravida aged 27 whose pregnancy had progressed normally up to three weeks before the expected date of delivery on March 22, 1945. At 3 a. m. on March 2 she was awakened from a sound sleep by the urge to urinate. After voiding she went back to bed. One-half hour later a most severe abdominal pain started with nausea followed by several very profuse and loose stools. She had retired at 9:30 p. m. feeling fine and had led a normal life the day before. The distress grew worse. She felt "as though something had burst" within her. Breathing became difficult and great substernal distress was noticed. She felt faint. She did not arrive at the hospital until three hours after the onset of the pain. When she arrived, after a 10 mile taxi ride, she was in extreme shock. She continued to vomit but said that the pains were a little less severe. The abdomen was tender and distended. Its contour was very irregular, saddle-like, with a mass in the upper left quadrant and another in the suprapubic region. A diagnosis of ruptured uterus was made. One-half hour elapsed between the time of diagnosis and laparotomy, four hours after the first pain. A 7 pound (3,175 Gm.) stillborn child was found free in the upper left abdomen. The placenta was found to be plugging a 6 cm. rent in the right posterior wall of the uterus. Blood clots and amniotic fluid were present in large amounts in the abdominal cavity. The child was quickly delivered and the placenta extracted. The uterus was removed subtotally. The patient recovered rapidly. The cause of this sudden accident three weeks before term, and before the onset of labor, is unexplained. There was no disease of the uterus demonstrated. There may have been a sudden violent movement of the fetus, which in turn caused a violent contraction lacerating the uterus.

Journal-Lancet, Minneapolis

65:265-314 (Aug.) 1945

- Kenny Concept and Treatment of Infantile Paralysis: Report of Five Year Study of Cases Treated and Supervised by Miss Elizabeth Kenny in America. J. F. Pohl.—p. 265.
Observations on Tropical Disease. J. A. Holmes.—p. 272.

65:315-350 (Sept.) 1945

- Body Minerals. W. G. Richards.—p. 315.
*Tuberculosis Among College Students: Fourteenth Annual Report of Tuberculosis Committee, American Student Health Association, for Academic Year 1943-1944.—p. 322.

Tuberculosis Among College Students.—The fourteenth annual report of the Tuberculosis Committee of the American Student Health Association covers the reported case finding programs in 286 colleges during 1943-1944. Of 282 colleges, 199 include a tuberculin testing routine and 83 employ chest roentgenograms without preliminary testing. Student enrolment at institutions having survey programs was 286,018. Among these 622 new cases of tuberculosis were diagnosed, a rate of 217.4 per hundred thousand. The lesions were classified as unstable in 156 and quiescent in 151; 315 were designated as healed. Students withdrawing from college to undergo treatment numbered 169. The committee emphasizes the need for active treatment in the majority of cases of tuberculosis found among young men and women of college age. Of the 622 students discovered to have early tuberculosis 453 were permitted to remain in college. It seems highly probable that a considerable proportion of this group may experience progression of their disease and will eventually have to undergo treatment. The two dose Mantoux method is recommended as the method of choice in tuberculin testing. If a single test dose is employed, an intermediate dose of at least 0.1 mg. old tuberculin or 0.0001 mg. of purified protein derivative should be used. The

Vollmer patch test cannot be recommended for use in colleges. It is sound practice and in the interests of economy to provide chest roentgenograms for only those students who react to an adequate dose of tuberculin. Complete protection against tuberculosis for college students cannot be attained through a program limited to the student body. Faculty members and employees, including food handlers, should participate in the tuberculosis control program. The lesions of pulmonary tuberculosis encountered in college students are, in a majority of instances, unstable and potentially dangerous. The absence of symptoms does not preclude the necessity for early treatment. Students with pulmonary lesions who remain in college should be under close observation, with frequent clinical and roentgenographic studies.

Maine Medical Association Journal, Portland

36:149-166 (Sept.) 1945

Presidential Address. R. V. N. Bliss.—p. 149.
New Wagner-Murray-Dingell Bill and S. 191. G. Bugbee.—p. 151.
Hospitals Now . . . and Tomorrow. A. C. Bachmeyer.—p. 156.

36:167-182 (Oct.) 1945

Physicians as Metaphysicians. J. S. Bixler.—p. 167.
Intraspinial Myelography and Herniated Intervertebral Disk in Lumbar Spine. R. R. Rix.—p. 169.

New England Journal of Medicine, Boston

233:339-368 (Sept. 20) 1945

Diagnosis and Treatment of Cystitis in Women and Children. H. L. Kretschmer.—p. 339.
Glycemia and Hyperglycemia Associated with Acute Meningitis: Report of Case. J. J. Federer.—p. 342.
One-Piece Munro Tidal Drainage Apparatus. W. A. R. Chapin.—p. 344.
Physiology. H. E. Hoff.—p. 345.
Acute Rheumatic Fever. Severe Rheumatic Myocarditis.—p. 359.
Portal Cirrhosis of Liver, Alcoholic Type.—p. 362.

233:369-398 (Sept. 27) 1945

Hodgkin's Disease: V. Involvement of Certain Other Organs. H. Jackson and F. Parker Jr.—p. 369.
Effect of Prediabetic State on Survival of Fetus and Birth Weight of Newborn Infant. H. C. Miller.—p. 376.
Parenteral Use of Vitamin Preparations. F. J. Ingelfinger.—p. 379.
Dissecting Aortic Aneurysm, with Involvement of Coronary Mouths, Occlusion of Left Femoral Artery and Rupture into Pericardium.—p. 386.
Nephrosis, Probably Due to Bismuth Intoxication. Syphilitic Aortitis.—p. 389.

233:399-426 (Oct. 4) 1945

Acute Pericarditis: Graphic Correlation of X-Ray, Clinical and Electrocardiographic Findings. D. L. Urschel, P. K. Bondy and S. M. Salley.—p. 399.
*False Positive Hinton Reactions Following Chickenpox. L. W. Kane and P. H. Henneman.—p. 407.
Parenteral Use of Vitamin Preparations. F. J. Ingelfinger.—p. 409.
Cerebral Infarct, Right: Internal Capsule and Corpus Striatum. Carcinoma of Stomach, with Extension to Omentum and Metastases to Liver and Mediastinal and Retroperitoneal Lymph Nodes.—p. 418.
Tubal Pregnancy.—p. 420.

Hinton Reactions Following Chickenpox.—Kane and Henneman during the last eighteen months observed the occurrence of transient false positive Hinton reactions in patients convalescent from chickenpox. The cases of chickenpox include 11 occurring in Harvard University students and 11 in children. All bloods were carefully drawn and the tests were carried out by the same skilled technician using undiluted serum. Wassermann, Hinton and Kahn tests were performed on each specimen. Five of the 22 patients with chickenpox exhibited transient false positive Hinton reactions for syphilis. In addition, 1 patient developed a transient positive Kahn reaction. No false positive Wassermann reactions were obtained.

New Jersey Medical Society Journal, Trenton

42:283-312 (Sept.) 1945

Primary Atypical Pneumonia: Statistical Analysis. W. A. Tansey, P. J. Culver and T. F. Frist.—p. 288.
Appendicitis. F. W. Rice.—p. 294.
Shock Therapy: 1937 to 1944. J. H. Taylor.—p. 300.

42:313-346 (Oct.) 1945

Fractures of Head of Radius. B. L. Clement.—p. 317.
Local Reaction to Penicillin Given by Mouth. E. C. Kern.—p. 326.
Board of Children's Guardians Health Program. J. E. Alloway.—p. 326.
Radical Resection of Carcinoma of Rectum and/or Rectosigmoid in Continuity with Retention of Anal Sphincter. A. O. Wilensky.—p. 328.

Pennsylvania Medical Journal, Harrisburg

48:1217-1408 (Sept.) 1945

Report on Poliomyelitis in Allegheny County, 1944. W. H. Robinson and W. R. Sweadner.—p. 1233.
Observations on Acute Poliomyelitis: Outbreak of 1944 in Allegheny County, Pa. J. Wright.—p. 1238.
Lobectomy and Pneumonectomy in Modern Medicine. C. P. Bailey.—p. 1242.
Recent Concepts of Endocrine Therapy in Women. R. H. Friday.—p. 1245.

49:1-96 (Oct.) 1945

Carcinoma of Colon in Rural Pennsylvania. H. L. Foss.—p. 17.
Fusospirochetal Pulmonary Abscess: Clinical Report of Case. E. R. Wiese and C. A. Heiken.—p. 28.
Movement for Improvement in Health and Physical Fitness: What Role Should We Play in Pennsylvania? L. G. Rowntree.—p. 31.

Public Health Reports, Washington, D. C.

60:1129-1164 (Sept. 28) 1945

*Chemotherapeutic Action of Streptomycin and Promin in Experimental Tuberculosis. M. I. Smith and W. T. McClosky.—p. 1129.
Outbreak of Food Poisoning Due to New Etiologic Agent: Salmonella Berta. G. H. Hauser, W. L. Treuting and L. A. Breiffel.—p. 1138.

60:1165-1200 (Oct. 5) 1945

Therapeutic Effect of Promin in Leprosy. G. H. Faget and R. C. Pogge.—p. 1165
Sickness Absenteeism Among Industrial Workers, Second Quarter of 1945, with Inquiry into Occurrence of Digestive Diseases, 1936-1945. W. M. Gafafer.—p. 1179

Streptomycin and Promin in Experimental Tuberculosis.—Smith and McClosky report that daily intramuscular injections of 5,000 units of streptomycin for a period of ninety days in guinea pigs infected with a human strain of tubercle bacilli has produced a chemotherapeutic effect superior to that obtained with 0.5 Gm. of promin per kilogram of weight given orally for the same length of time. Since the dose of promin used is about half the maximum tolerated dose while the dose of streptomycin is less than one-twentieth the toxic dose, it appears that streptomycin has a chemotherapeutic index better than ten times that of promin. It also seems possible that by increasing the dose of streptomycin and with better methods of administration its chemotherapeutic effectiveness may be enhanced. Using a suitable combination of streptomycin and promin, it was possible to obtain better results under the experimental conditions employed by the authors than have ever been obtained previously.

Quarterly J. of Studies on Alcohol, New Haven, Conn.

6:131-270 (Sept.) 1945. Partial Index

Simple Method for Determination of Alcohol in Micro Quantities of Blood and Other Fluids. L. A. Greenberg.—p. 135.
New Legislation for Control of Alcoholism: Connecticut Law of 1945. S. D. Bacon.—p. 188.
Attitude of Industrial Management Toward Alcoholism. C. Mortenson.—p. 205.
Screening Inebriates in Municipal Courts. L. Drucker.—p. 209.
Physician and Alcoholic. H. W. Haggard.—p. 213.
Role of Church and Pastor in Postwar Alcoholism. O. F. Blackwelder.—p. 222.
Alcoholic in Penal Institution. H. B. Gill.—p. 233.
Alcoholics Anonymous in Postwar Emergency. W. W., One of the Founders.—p. 239.
Note on Drinking in College Community. C. C. Fry.—p. 243.
The Citizen's Part in Problem of Alcoholism. M. Mann.—p. 249.

Review of Gastroenterology, New York

12:321-392 (Sept.-Oct.) 1945

Gastric Acidity and Occult Blood Studies of Young Adult Males with Duodenal Ulcer. R. C. Page.—p. 343.
Gastrostomy: History of Its Development, Indications and Contraindications. M. Thorek.—p. 347.
Pelvic and Abdominal Pain in Women. C. A. Gordon.—p. 353.
Abdominal Pain in Functional Disorders. W. Ostrow.—p. 356.
Testicle and Gastric Secretion. P. DeMuro and F. Marconi.—p. 363.

Rhode Island Medical Journal, Providence

28:625-700 (Sept.) 1945

Newer Developments in Etiology and Treatment of Diabetes. E. P. Joslin.—p. 639.
Critique of Psychosomatic Medicine. C. Binger.—p. 642.
Geriatrics. R. I. Lee.—p. 647.
The Doctor's Patient and Wagner Act. J. F. Kenney.—p. 652.
Industrial Accidents: Comparative Study of Accident Record at Collyer Insulated Wire Company, Pawtucket. R. I. C. L. Farrell and H. Stanzler.—p. 661.

Southern Medical Journal, Birmingham, Ala.

38:565-634 (Sept.) 1945

- Rectal Ulcers with Perirectal Fistula as Port of Entrance of Torula Encephalitis. V. K. Allen and L. Lowbeer.—p. 565.
Modified Manchester Technic for Partial Prolapse of Uterus. L. F. Turlington.—p. 570.
Carotid Sinus Syndrome. W. K. Purks.—p. 578.
Echinococcus Disease: Report of 3 Cases of Calcified Cysts of Liver. P. L. Hudson.—p. 584.
Note on Influence of "Folic Acid" on Leukocyte Equilibrium in Malnourished Patients. L. J. Berry, T. D. Spies and C. A. Doan.—p. 590.
Contagiousness of Poliomyelitis: Studies in Bacterial Metabolism: CXXI. A. I. Kendall.—p. 593.
*Role of Adrenal in Waterhouse-Friderichsen Syndrome: Case Report. A. H. London Jr. and R. Holman.—p. 596.
Treatment of Asphyxia. J. Kreiselman.—p. 598.
*Results of Surgical Treatment in 100 Cases of Chronic Mental Illness. L. Hofstatter, A. K. Busch, J. F. Clancy and E. A. Smolik.—p. 604.
Kidney Colic Simulated by Traumatic Dissecting Aneurysm of Abdominal Aorta. H. E. Carlson.—p. 607.
Some Experience with Small Dosage Dust and Pollen Therapy. F. K. Hansel.—p. 608.
Relationship of Radiologist to Practicing Physician. R. T. Wilson.—p. 613.
Undergraduate Curriculum in Medicine. J. P. Gray.—p. 619.
Medical Education Above Undergraduate Level. H. W. Kostmayer.—p. 624.

The Adrenal in the Waterhouse-Friderichsen Syndrome.—London and Holman report 5 cases of Waterhouse-Friderichsen syndrome. One patient had meningococcal meningitis and appeared moribund on admission but recovered following intensive sulfadiazine therapy. Four of the patients were diagnosed clinically as having Waterhouse-Friderichsen syndrome. Only 3 of these patients presented postmortem massive adrenal hemorrhage necessary to fulfil the criteria for the diagnosis of this syndrome. There was nothing in the clinical or laboratory data to distinguish the case that failed to meet the criteria from those which did. One case is unique in that the typical symptoms with positive blood cultures (meningococcus type II-A) and massive adrenal hemorrhage occurred in a woman aged 30 who was eight months pregnant. The fetal blood culture was positive for the same organism, but the fetal adrenals appeared normal. This case provides the human counterpart of the experiments of Stewart and Rogoff, who showed that bilateral adrenalectomy was without effect in pregnant dogs because ample cortical hormone was supplied by the fetal adrenals. The authors believe that the currently accepted view that death in cases of Waterhouse-Friderichsen syndrome is due to adrenal insufficiency secondary to hemorrhage in the adrenal glands is untenable and that the indications for adrenal cortex therapy are as great in all cases of severe septicemia and toxemia as they are in cases of Waterhouse-Friderichsen syndrome.

Surgical Treatment of Chronic Mental Illness.—Hofstatter and his associates review the clinical results obtained with bilateral prefrontal leukotomy in the first hundred institutionalized patients operated on since 1941. This series represents patients who have been ill for an average of ten years and have been hospitalized for an average of five years. Many of these showed not only social maladjustment but definite antisocial behavior on a noisy, combative and destructive level, often with suicidal or homicidal tendencies. They had received many other types of therapy, all of which had failed to influence the psychosis. In 65 of the patients all four quadrants were cut. In 35 patients leukotomy was limited to the lower (orbital) quadrants exclusively, with no statistical difference in therapeutic effect. Comparing the results in these 100 patients with those obtained in a survey of 582 patients in seventeen other centers, the authors find that the percentages lie close together; they report 33 per cent much improved, 34 per cent improved and 31 per cent slightly or not improved, which compares favorably with 31, 33 and 30 per cent. They think that the results justify the use of this procedure in the chronic mentally ill.

Virginia Medical Monthly, Richmond

72:403-454 (Oct.) 1945

- Influence of Sister Kenny Publicity on Treatment of Poliomyelitis. R. V. Funsten.—p. 403.
Brain Tumor in State Hospital Patients: Study of 8 Cases in 120 Consecutive Autopsies. E. L. Crumacker and W. Riese.—p. 407.
Somatic Neuroses. F. H. Redwood.—p. 420.
Connecting Link. J. H. Hagy.—p. 425.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2:309-342 (Sept. 8) 1945

- *Meningitis After Spinal Analgesia. M. Kremer.—p. 309.
Treatment of Burns: Plea for Simplicity. C. W. Flemming.—p. 314.
First Aid Treatment of Phosphorus Burns. W. McCartan and E. Fecit.—p. 316.
Globin Insulin: Clinical Trial. J. M. Malins.—p. 318.
Case of Paraplegia After Cerebrospinal Meningitis. H. H. Stewart.—p. 319.
Fractures of Internal Malleolus. G. M. Muller.—p. 320.

2:343-376 (Sept. 15) 1945

- Thiouracil in Treatment of Thyrotoxicosis. A. Grainger, D. A. Gregson and H. S. Pemberton.—p. 343.
Role of Animal Type Dermatophytes in Human Ringworm. B. A. Thomas, Mary Lennox and J. T. Duncan.—p. 346.
Nerve Injuries in Children. H. S. Souttar.—p. 349.
Sciatic "Neuritis." J. M. Holmes and B. R. Sworn.—p. 350.
Food Consumption of Working Class and Lower Middle Class Families in Brussels During January 1945. P. A. Bastenie, T. F. Macrae, G. A. Smart and S. Yudin.—p. 351.
Case of Local Tetanus. F. A. Elliott.—p. 353.

Meningitis After Spinal Analgesia.—Kremer reports 7 cases of infection of the subarachnoid space after spinal analgesia. In 1 the necropsy showed a chronic inflammation of the subarachnoid space, which had resulted in fibrin deposition with subsequent organization. In this process of organization pools of infected cerebrospinal fluid had become isolated. If the fibrin should break down, this infected cerebrospinal fluid would be liberated into the general subarachnoid circulation. These isolated areas may not develop the same concentration of therapeutic substances as is present in the free flowing cerebrospinal fluid. If the causative organism is sensitive to sulfonamides it is cleared only from the general cerebrospinal fluid circulation and not from these loculi. These areas of isolated cerebrospinal fluid occasionally are freed and cause the relapses which form the most striking clinical feature of the infection. There can be little doubt that the spinal analgesics are mild irritants; it is possible that this irritation results in the outpouring of protein rich fluid, which provides a favorable medium for pathogenic organisms. The only satisfactory treatment is prophylaxis. It should be possible to avoid these cases. If in an emergency a rigid technic is not possible, spinal analgesics should not be used.

Edinburgh Medical Journal

52:289-336 (Sept.) 1945

- Physiology of Peripheral Nerve Injury. A. E. Ritchie.—p. 289.
Shock Due to Tissue Trauma: Observations on Diagnosis and Assessment. A. W. Wilkinson.—p. 306.
Problem of Stiff Knee Joint in Fracture of Shaft of Femur. I. S. Smilie.—p. 317.
Severe Hemorrhage from Ascending Colon Treated by Ligation of Ileocolic Artery: Report of Case. D. L. C. Bingham.—p. 329.

Journal of Royal Naval Medical Service, London

31:129-194 (July) 1945

- Salt Deficiency States in Tropical Climates. J. C. Stenning.—p. 129.
*Working Conditions of Boiler Cleaning Parties with Special Reference to Dust Inhalation. G. D. Channell.—p. 146.
Gunnery and Blast Deafness. S. C. Suggitt.—p. 151.
Bubonic Plague in Dakar. C. M. H. Rotman.—p. 155.
Medical Study of the Black Hole of Calcutta. M. Critchley.—p. 158.
Pyoderma in the Tropics, with Description of 3 Cases. A. R. Harper.—p. 170.

Boiler Cleaning and Dust Inhalation.—The investigation carried out by Channell showed that dust is produced in large quantities during the cleaning of boilers. Dust masks are essential to protect boiler cleaners. The type obtained for trial has proved very satisfactory. A single analysis of boiler tube deposit showed that it contained a high percentage of metallic copper and small amounts of metallic oxides, notably lead. If inhaled, these metals are detrimental to health. Further analyses of boiler deposit are required to confirm the constant presence of these constituents. Protective clothing would increase the comfort of working conditions. Eye shields are admirable for the protection of the eyes. The incidence of upper respiratory infections appears to be higher in boiler cleaning personnel.

Proceedings of Royal Society of Medicine, London**38:473-544 (July) 1945. Partial Index**

- Diphtheria Antigens: Their Preparation, Properties, Laboratory Testing and Statutory Control. P. Hartley.—p. 473.
- *The Patient: Neglected Factor in History of Medicine. D. Guthrie.—p. 490.
- The Paget Cell: Its Structure, Occurrence and Significance. E. Meirowsky and S. Keys, with technical assistance of P. H. Jacobs and Hyla M. Holden.—p. 495.
- Treatment of Retained Testis. T. W. Mimpriss.—p. 507.

The Patient: Neglected in Medical History.—Guthrie pays tribute to some patients of the past who have played an important part in medical progress. The patient's name is mentioned in many of the descriptions of wonderful cures in the Greek temples of Esculapius. Hippocrates, though entirely free from this boastfulness, mentions the names of many patients. The contribution of the patient is passive, and few patients, even if they happen to be also medical men, are concerned with the benefit to humanity which may accrue from their sufferings. The author mentions Beaumont's patient Alexis St. Martin and Mrs. Jane Todd Crawford, on whom Dr. Ephraim McDowell performed the first ovariectomy. Louis Pasteur gave full credit to his patients for the part they played in the fight against rabies. The story of the Alsatian boy Joseph Meister, who was attacked by a mad dog, is well known. On May 14, 1796 Jenner inoculated James Phipps, a boy 8 years of age, with cowpox from the hand of Sarah Nealmes, a milkmaid. There have always been doctors who did not hesitate to experiment on themselves in the interests of science; men like John Hunter, who shortened his life by an unfortunate effort to investigate the cause of syphilis. Lazear, Adrian Stokes and Noguchi died of yellow fever, Ricketts of typhus, Dutton of trypanosomiasis, and there have been many other martyrs to science. Banting related that the first patient to be treated with insulin, in 1922, was Dr. Joe Gilchrist. In the category of self experiment may be placed Manuel Garcia, the singing master who was curious to see his own vocal cords and who invented the laryngoscope in 1854, although he had no idea then that he was founding a new medical specialty. Among the patients whose influence has been of a negative character Guthrie mentions "typhoid Mary."

Archives des Maladies de L'Appareil Digestif, Paris**34:1-100 (Jan.-Feb.) 1945. Partial Index**

- Digestion of Cellulose in Man. M. Chiray, J. Pochon and J. Dierick.—p. 1.
- Invagination in Adults Induced by Intestinal Tumors. Bergeret, Mègret and Champeau.—p. 14.
- *Nonulcerative Duodenitis. P. Oury and A. Vernet.—p. 30.
- Bacteriologic Contribution to Problem of Abdominal Gas: Limitations of Knowledge. A. R. Prévot.—p. 45.
- Ulcer of Rectum. Monique Parturier-Lannegrace and J. Arnous.—p. 50.
- Disturbances of Digestion Secondary to Excess of Estrogens. M. A. Bernard.—p. 56.

Nonulcerative Duodenitis.—Duodenitis is to be differentiated from ulcer of the duodenum as gastritis is differentiated from gastric ulcer. Dyspeptic, pseudoulcerative and hemorrhagic duodenitis can be diagnosed by clinical features, but the diagnosis of duodenitis is difficult. Serial roentgenograms may clarify the diagnosis and may aid in the differential diagnosis from ulcer. Oury and Vernet do not agree with many radiologists and clinicians that any deformity of the bulb is a definite sign of ulcer. The authors emphasize that only a niche on the lesser or greater curvature is characteristic of an ulcer. Rarely the niche may be visualized at the base. In the absence of a niche, additional important signs of ulcer are an incisura caused by spasm, pseudodiverticula from a juxtaapyloric ulcer, a true bulbar biloculation and a deformity of the bulb. In contrast to this, duodenitis presents a hazy bulbar contour in the absence of a niche, rapid variations in the configuration of the deformity and difficulty in filling and emptying of the bulb, with irregular indented borders. Medical treatment is to be preferred to surgical treatment. The treatment consists in a strict prolonged diet of milk, vegetable soups, semolina and tapioca soups, to which are added toasted bread, stewed fruit, lean meat and lean fish. Rest is helpful. Administration of 5 Gm. of bismuth

subnitrate before meals and tincture of belladonna, 30 drops as the total daily dose, is recommended. In belladonna resistant cases good results were obtained by intravenous injections of atropine. Subcutaneous administration of solution of parathyroid combined with intravenous injections of calcium gluconate was effective in cases of pseudoulcerative duodenitis. Administration of vitamin A and D is favored.

Cardiologia, Basel**9:1-120 (Nos. 1 & 2) 1945**

- Clinical and Anatomic Investigations on Patient with Winiwarter Buerger's Endangitis Obliterans Who Had Been Observed for Twenty-Four Years.* V. F. Wuhrmann and A. Essellier.—p. 1.
- Electrocardiographic Diagnosis of Location of Branch Block: Critical Analysis and Casuistic Study; Clinical, Electrophonocardiographic, Roentgenokymographic and Sphygmographic Study; Histologic Study. F. Addarii, L. Martini, I. Mahaim and M. R. Winston.—p. 33.
- *Examination of Capillary Resistance in Human Subjects. V. W. Frischknecht.—p. 76.
- Principles of Cardiopectography: II. Stereography. R. Sulzer and P. W. Duchosal.—p. 106.

Capillary Resistance in Human Subjects.—Frischknecht found that the suction procedure (principle of Hecht, 1907) is superior to the pressure method (principle of Rumpel-Leede, 1911) in determining capillary resistance. He determined the critical pressure values in 15 cases with a 2 cm. suction bell and compared these values with results obtained with a 1 cm. suction bell. The measurements were made in three regions: supraclavicular, infraclavicular and cubital. It was found that a person can show pathologic values in the clavicular regions and normal values in the cubital region or vice versa. A constant relation between the critical pressure obtained with the 2 cm. or 1 cm. bell was not observed. The critical time is not a suitable measure, but the critical pressure is the optimal measure for capillary resistance in that fluctuations of the clinical pressure parallel the clinical course of hemorrhagic diathesis. A single determination of capillary resistance obtained with the suction method frequently gives less information than the stasis experiment of Rumpel-Leede, since the normal values of the critical pressure vary greatly. The aim of the suction method is not the determination of the absolute capillary resistance but control of the fluctuations of the resistance during the action of various stimuli. This can be ascertained by daily determination in the supraclavicular region of the critical pressure, which is that negative pressure (measured in millimeters of mercury) which produces one to two petechiae in one minute suction time under a bell 2 cm. in diameter.

Acta Chirurgica Scandinavica, Stockholm**92:1-98 (March 10) 1945**

- *Ten Years of Serum Therapy of Appendicitis. C. D. Bartels and E. Manicus-Hansen.—p. 1.
- Rectal Prolapses in Children. O. Wiklander.—p. 17.
- Obstruction Following Gastric Resection and Gastroenterostomy. R. Brandberg.—p. 37.
- Study of Purpuroid Diseases of Urinary Tract. M. Sulamaa.—p. 65.
- Stabilizing Operation for Asymmetrical Sacralization. K. E. Petersen.—p. 86.

Serum Therapy of Appendicitis.—Bartels and Manicus-Hansen compared the results of operations for acute appendicitis during the decade from 1931 to 1940, in which serum therapy was practiced, with those of 1921 to 1930 without serum therapy. During the period without serum therapy 490 operations were performed with 48 deaths, as compared with 902 operations with 28 deaths during the period in which serum therapy was employed. The number of cases of peritonitis was nearly the same within the two periods. Accordingly, differences in the severity of the cases cannot possibly have played any part in the decrease of the mortality rate within the period during which serum therapy was employed. Adults generally received 20 to 25 cc. of anti-gas gangrene serum and 25 cc. of anti-coli serum. Children received correspondingly smaller doses. Intravenous administration of serum was performed at the end of the operation. Larger doses were given in severe cases. The injections were repeated during the first few days after the operation. The serum is not only a "peritonitis serum." It should also be given as a prophylactic measure in gangrenous cases and in cases in which the disease is of more than forty-eight hours' duration.

Book Notices

Bacillary Dysentery, Colitis and Enteritis. By Joseph Felsen, B.A., M.D., Director of Medical Research, Bronx Hospital, New York. Cloth. Price, \$6. Pp. 618, with 144 illustrations. Philadelphia & London: W. B. Saunders Company, 1945.

For many years in the temperate climes bacillary dysentery was regarded as being either nonexistent as a clinical entity or characterized only by occasional sporadic epidemics. That *Public Health Reports* constantly reported, month by month, the recurrence of occasional cases of dysentery seemed of no moment or consequence and was generally ignored. The author of this book has been one of the foremost proponents of the thesis that carriers of this dreaded disease were always among us, that epidemics were of frequent occurrence and that the chronic form of bacillary dysentery was constantly to be observed. The further theory that dysentery was in a direct manner associated with ulcerative colitis and even enteritis was his particular thesis, one which in past years he has labored hard to establish. By the collaborated studies of the International and the Pan American Dysentery Register he has had an unusual opportunity to collate all this material in a well written, readable, interesting and well documented volume.

The prose style of the book is excellent; the references are innumerable, accurate and extremely up to date. The typography, the paper, the illustrations, are excellent and well reproduced.

The historical aspects of bacillary dysentery are well analyzed; the momentous effects of such epidemics in terminating military campaigns, rather than the force of arms, are startlingly portrayed and are only now to be appreciated after the recent armed struggle, in which for the first time in history epidemics of disease were notably absent.

The epidemiology and the clinical aspects of epidemic and endemic bacillary dysentery are described with true clinical instinct, and the underlying bacteriology and serology, confusing as it is with its various and varying classes and nomenclature, are depicted in relative simplicity. The book, in this respect, fulfils a long-needed want for the general reader.

By including chronic ulcerative colitis and chronic distal ileitis as subtitles of bacillary dysentery, the author begs his question and presupposes the etiologic relationship of the two or more clinical entities. The latter part of the book is an attempt to define and to defend this hypothesis. Some confusion arises when in the statistical treatment of etiology the author constantly refers to "diarrhea, enteritis and dysentery" as if they were all one. Statements that chronic dysentery can be differentiated from ulcerative colitis by means of the sigmoidoscope run counter to the oft expressed opinions of many of our foremost authorities. The absolute clinical significance which the author grants to low titers of serum agglutination is also much mooted and less acceptable to many bacteriologists and clinicians. The fact that diagnostic titers were obtained in 93.5 per cent of cases of ileitis and colitis is a striking statement.

Regardless of whether one agrees in whole or in part with the thesis of the author, the book contains an orderly presentation of all the facts to date, clearly and lucidly laid out, arranged with precision and scientific discrimination, a volume which is both literary and provocative and essential reading for internists and specialists, who will see this problem grow in importance and magnitude, rather than recede, in coming years.

Bacillary dysentery is unquestionably among us at all times, and the relationship of the disease to the growing problems of colitis and ileitis deserve the very close study which this volume has devoted to the problem.

Introduction to Diseases of the Chest. By James Maxwell, M.D., F.R.C.P., Assistant Physician and Demonstrator of Practical Medicine, St. Bartholomew's Hospital, London. Second edition. Cloth. Price, 12s. 6d. Pp. 292, with 66 illustrations. London: Hodder and Stoughton, Ltd., 1945.

This edition of Dr. Maxwell's book has been brought up to date in several respects, yet it is shorter and contains fewer illustrations than the first, which was reviewed in these columns in 1939.

The book is divided into four sections and thirty-six chapters followed by the illustrations, which are individually captioned and referred to in the text. Sections I, II and III deal with the fundamentals of diagnosis of chest diseases. The history is concisely developed by discussion of major symptoms, minor symptoms and auxiliary data. Emphasis is placed on the major symptoms of chest disease in this first section and they are often referred to in subsequent chapters.

Dr. Maxwell has done an admirable piece of work in his presentation of the principles of physical examination of the chest. Emphasis has been placed on careful inspection of the entire patient and then inspection of the chest before any further examination is made. In a concise and clear manner the technic of palpation, percussion and auscultation is described. Similarly the significance of the physical findings is described in a manner making this section valuable particularly to the student and a refresher for the practitioner.

Attention should be drawn to the summaries concluding the chapters on physical examination. Likewise section III, on special investigations, clearly describes sputum studies, the value of hematologic studies and examination of the pleural fluid. Chapter II, on radiology of the chest, is well written and contains a wealth of information. It is good to see emphasis given to the place held by thoracoscopy and exploratory thoracotomy in chest diagnosis.

Chapters xiii to xxxvi in section IV deal with diseases and conditions of various parts of the respiratory tract. It is enlightening to find a work on chest diseases in which diseases of the upper respiratory tract and larynx precede any discussion of bronchopulmonary disease. Reference is made in the chapter on bronchiectasis to the influence of upper respiratory infection on bronchopulmonary function and disease.

The chapter dealing with asthma is well written and develops several factors any one of which may be the stimulus setting off the asthmatic syndrome. These factors are (1) allergic, (2) nasal, (3) bronchopulmonary, (4) alimentary, (5) endocrine and (6) psychologic. Their interrelation is stressed. Other chapters dealing with chest injuries, pulmonary circulation, emphysema, lung abscess, pleurisy, empyema, pulmonary tuberculosis and tumors of the bronchi and lungs are clear descriptions of these entities, their diagnosis and treatment.

More elaborate information on and discussion of silicosis, other industrial pulmonary diseases and some of the less common chronic lung infections would be welcome. This would, of course, enlarge the text.

Dr. Maxwell's consideration of the treatment of pulmonary tuberculosis is sound and conservative, and a brief discussion of surgical procedures is presented.

This small volume contains a wealth of material. The author has wasted no words but rather has presented his subject so directly and concisely that both the student, the general practitioner and the specialist may all find here the meat of an important subject.

The Care of the Neurosurgical Patient Before, During and After Operation. By Ernest Sachs, A.B., M.D., Professor of Clinical Neurological Surgery, Washington University School of Medicine, Saint Louis. Cloth. Price, \$6. Pp. 268, with 177 illustrations. St. Louis: C. V. Mosby Company, 1945.

This little book will be a source of pleasure to every one interested in neurologic surgery. It was written by one of the pioneers and masters of this field of surgery. As the title indicates, it is primarily concerned with the actual care of the patients, although the questions of symptoms, signs and diagnosis are touched on. The major concern is with the preoperative preparation of the patient, the organization of the operating room, the choice and administration of the anesthetic, actual operative technics, the administration of fluids and the post-operative care of the patient. The book is intensely personal. Dr. Sachs has given us the benefit of his many years of experience. He has related in detail how his patients are cared for at Barnes Hospital. The book will prove a mine of information, particularly to young men just beginning their training in neurologic surgery. It is replete with details of those little things which mean so much in the satisfactory handling of a difficult situation and in achieving all of the comfort possible for the patient.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

RH FACTOR, ABORTIONS AND STERILITY

To the Editor:—I have been married for ten years and have no children. My wife has had three miscarriages. She is Rh negative. For the past four years she has been unable to conceive. Could the Rh factor be responsible for this as well as for the miscarriages?

Captain, M. C., A. U. S.

ANSWER.—The extensive data thus far accumulated have failed to show any etiologic connection between the Rh factor and repeated miscarriages or sterility. In any event, as many as 1 out of every 7 persons is Rh negative, so there is a strong possibility of coincidence in a case like this. Clinical complications occur only when those who are Rh negative become sensitized to the Rh factor (only 1 in about 30 becomes sensitized when exposed to Rh positive blood by transfusion or as a result of a pregnancy with an Rh positive fetus), and the state of being Rh negative is no cause for concern as long as sensitivity is absent. Reliable tests for Rh antibodies are now available which can be carried out on any patient's blood serum and will definitely establish whether or not one is sensitized to the Rh factor (Wiener, A. S.: Conglutination Test for Rh Sensitization, *J. Lab. & Clin. Med.* 30:662 [Aug.] 1945. Diamond, L. K., and Abelson, N. M.: The Detection of Rh Sensitization: Evaluation of Tests for Rh Antibodies, *ibid.* 30:668 [Aug.] 1945. Coombs, R. R. R.; Mourant, A. E., and Race, R. R.: Detection of Weak and "Incomplete" Rh Agglutinins: A New Test [Preliminary Report], *Lancet* 2:15 [July 7] 1945).

SUFFOCATION AND BLOOD CARBON MONOXIDE

To the Editor:—It was stated recently in connection with a death presumably caused by suffocation that, since no carbon monoxide was found in the blood fifteen days after death, the death could not have resulted from suffocation, as in suffocation there would be incomplete combustion of the tissue, and carbon monoxide would be found in the blood. In suffocation, does not death result from absence of combustion rather than from incomplete combustion? Even if any carbon monoxide was formed, would it not be found as carbon monoxide hemoglobin rather than as carbon monoxide gas? There were not any postmortem signs of carbon monoxide poisoning reported by the pathologist. Could carbon monoxide be found in blood fifteen days after death? Would not a negative test for carbon monoxide in blood be without significance in death by suffocation? How long after death could carbon monoxide hemoglobin be detected?

Francis L. Parker, M.D., Charleston, S. C.

ANSWER.—W. D. McNally of Chicago in his book on Toxicology, 1937, cites a case in which he found carbon monoxide in the tissues of a body examined one year after death. The literature on the subject is reviewed in C. K. Drinker's book on Carbon Monoxide Asphyxia, 1938. There a case is cited in which carbon monoxide was found two hundred and ten days after death. Its presence or absence in the exhumed body depends on several factors. For example, even in a patient resuscitated from near death by artificial respiration and carbogen (carbon dioxide 7 per cent and oxygen 93 per cent) the blood is not completely cleared of carbon monoxide for from twelve to twenty-four hours. This is because carbon monoxide diffuses into the tissues and is fixed by respiratory pigment in the liver, spleen, bone marrow and muscle, which releases the gas rather slowly. After death from carbon monoxide poisoning, diffusion to the surrounding air would be slow and would reach an equilibrium in an airtight coffin; this would not occur in the presence of air currents. If the body decays and is leached with water, presence or absence of carbon monoxide would depend on the extent of the decay and leaching. Thus the interpretation of a negative test for carbon monoxide in the blood or tissues of a body would depend on the conditions of the burial and the state of the body on being exhumed.

It is likely that, unless the blood vessels of a corpse have been perfused considerably before the embalming fluid is injected, the tissues will show the presence of carbon monoxide much longer than fifteen days. A thorough perfusing of the blood vessels of a person dying of carbon monoxide poisoning would remove most of the blood and some of the carbon monoxide from the tissues. The blood vessels then could be injected with embalming fluid and no carbon monoxide would be found in the con-

tents of the large blood vessels. In a case of this sort the so-called blood could be negative for carbon monoxide and the tissue content would be small. However, if the person had died of carbon monoxide poisoning and the corpse was not tampered with, then carbon monoxide should be present fifteen days after death in any blood found and in the tissues in significant amounts. The finding of a positive test of low concentration is not easy to interpret. Smoking may yield a carbon monoxide saturation of the blood of from 1 to 5 per cent. Also the embalming fluid may be saturated with carbon monoxide gas and cause a positive test, or blood may be removed from a donor, saturated with carbon monoxide and then injected into the corpse.

REFRACTORY MENOPAUSAL SYMPTOMS

To the Editor:—A woman aged 42, following a complete hysterectomy, developed surgical menopause symptoms while in the hospital. She has been receiving 40,000 to 60,000 rat units of estrogenic substances hypodermically and six proprietary estrogenic tablets daily. Despite this she still is uncomfortable and has menopausal symptoms. How high can I go safely with the estrogens hypodermically? Would there be any benefit if I were to give less estrogen and some lutein extract? No benefit has been noted from ovarian and pituitary extract tablets. I have been using both the oil ampules and the aqueous ampules, but the patient still complains of pain, and swellings develop at the site of injection even though the area is massaged.

M.D., New York.

ANSWER.—Apparently this patient is suffering from a severe menopausal syndrome which is extremely resistant to estrogenic therapy, since relatively large amounts of estrogens have been found ineffective in relieving the symptoms. Occasionally such patients are encountered, and it is usually found that there is an underlying psychic pattern which offers resistance to any form of medication. It is possible that the patient has a psychic disturbance which may require treatment apart from the endocrine therapy. That she may be an extremely high strung and suggestible individual is indicated by the fact that she reacts locally to the aqueous suspensions of estrogens which are without any chemical irritant.

The following treatment is recommended to determine whether or not the patient is simply resistant to estrogen therapy or has an underlying psychic disturbance: She should receive injections of 5 mg. of estradiol dipropionate or diethylstilbestrol dipalmitate once weekly for three weeks. If this does not produce a satisfactory therapeutic response there is no need to continue searching for the proper dosages of estrogens, since this dosage is ample for all such cases. The continuous powerful action of these two substances makes them the most effective estrogens available. If this therapy is not effective, psychiatric consultation is advised. If this is not feasible, sedation with phenobarbital, $\frac{1}{4}$ or $\frac{1}{2}$ grain (0.016 or 0.032 Gm.) three times daily, may be used in conjunction with estrogenic therapy. One other possibility remains: combination of the large dose of estrogens with 10 mg. of testosterone propionate at each injection, since occasionally it has been found that this therapy may work to advantage.

IRRITATION FROM USE OF CONTACT LENSES

To the Editor:—Will you kindly send information concerning the use of contact lenses by a patient with keratoconus? I am referring to such problems as methods of getting rid of excess mucus and causes of "steam" under the lens.

A. V. Carl, M.D., Danville, Pa.

ANSWER.—These difficulties are all due to irritation, which may be mechanical or chemical. Those due to mechanical irritation can be helped by a better fit to remedy pressure points or tight or loose fitting and thick edges. There is a tendency to increased tolerance as the contact glass is worn, so that one must not be discouraged by an initial reaction that comes on in half an hour to an hour during the first week or two of use. Fortunately, cases of keratoconus are among the more tolerant, less sensitive ones.

More difficult is the treatment of the chemical irritation. The lubricating solution may be of too low, more rarely too high, osmotic strength. Usually a solution isotonic with the tears equivalent to 1.4 per cent sodium chloride is best. The solution may not be sufficiently alkaline. Usually a pH of 8 to 8.8 is well tolerated. The clouding may be due (a) to the presence of mucus or other secretions and cells which find their way into the liquid lens between the cornea and the contact glasses or (b) to opacities forming in the cornea itself. The former disappear at once with a fresh clean solution. The latter disappear slowly in fifteen minutes or more, depending on how far they have progressed. Different buffer solutions must be tried, the concentration and the pH being varied and different chemicals being used, since there are idiosyncrasies—for example, some persons do not tolerate boric acid. If clouding occurs

after a definite period, say two or four hours, the patient should be instructed to change the solution about half an hour before the clouding usually takes place.

Formulas for buffer solutions:

A. Solution 1 (acid)		
Boric acid	12.4 Gm.	
Sodium chloride	8.4 Gm.	
Distilled water	1,000.0 cc.	
Solution 2 (alkaline)		
Sodium borate anhydrous (equivalent to 36.2 Gm. of borax)	19.1 Gm.	
Sodium chloride	11.7 Gm.	
Distilled water	1,000.0 cc.	

To obtain buffer of desired pH , these are mixed as follows:

pH	Solution 1	Solution 2
7.6	30	5.25
8.0	30	11.0
8.4	30	18.0
8.8	15	45.0

B. Solution 1		
Boric acid (anhydrous)	12.4 Gm.	
Potassium chloride (anhydrous)	7.4 Gm.	
Distilled water	1,000.0 cc.	
Solution 2		
Sodium carbonate anhydrous	21.2 Gm.	
Distilled water	1,000.0 cc.	

To obtain buffer of desired pH , these are mixed as follows:

pH	Solution 1	Solution 2
7.6	30	1.5
8.0	30	2.5
8.4	30	4.0
8.8	30	6.5

CHRONIC INFECTIOUS MONONUCLEOSIS

To the Editor:—A boy aged 6 years has a positive heterophile antibody test for infectious mononucleosis. All other tests of the serum have been negative. General supportive measures are employed such as a high protein diet, crude liver extract and vitamins. I am concerned now as to whether or not the crude liver is indicated; I believe it is on a supportive basis. Also I should like suggestions as to the best way to get the proteins into his system and as to whether or not there are any specific vitamins supposed to be of benefit in conditions of this sort? There are signs of chronic inflammation of the liver—a mild hepatitis. In times past I have sometimes used sodium thiosulfate as an alternative. Would this drug have any special indication here? Would iodine benefit this patient? I have been cautioned against these drugs in view of the condition of the liver. Would convalescent serum be practical or applicable? Would immunotransfusions in small amounts be recommended? This case is rather protracted—now going into the seventh month. The patient seems to be holding up well, but the blood picture stays rather constant.

L. F. Valentine, M.D., North Platte, Neb.

ANSWER:—It is rather unusual for the abnormal blood picture and high heterophile antibody to persist for seven months in infectious mononucleosis. There is no specific therapy for this disease. Convalescent serum (Lassen, H. C. A., and Thomsen, S.; *Acta med. Scandinav.* 104:498, 1940) has been reported to be beneficial in the early stages in bringing down the fever and producing symptomatic relief, but the serum is not readily obtainable. Blood transfusions are not indicated unless there is a significant anemia. Reports on the use of immunotransfusions were not found. The combination of a high protein diet, brewers' yeast powder, acceptable multivitamin preparations and injections of crude liver have been recommended for the treatment of hepatitis but would have no specific effect on infectious mononucleosis. The protein content of the diet can be raised by giving supplements of oral amino acid mixtures (Aminoids, Arlington Chemical Company, or Amigen, Mead Johnson & Co.). Evidence is lacking that sodium thiosulfate or iodine would be beneficial in a case of this type.

PREGNANCY TEST AND ADMINISTRATION OF ESTROGENS

To the Editor:—What effect would the administration of diethylstilbestrol have on the Friedman test in a nonpregnant woman? Would large parenteral injections of theelin affect the accuracy of the Friedman test?

M.D., Chicago.

ANSWER:—The administration of estrogenic substances to a patient should not affect the accuracy of the Friedman test if the determination is made on the basis of the ovarian reaction in the rabbit which receives the injection of the patient's urine. This reaction consists in the development of hemorrhagic follicles in the otherwise small nonvascular rabbit's ovaries. Some laboratories utilize the development of hyperemia of the oviducts in the rabbit as an indication of a positive test for pregnancy in the absence of ovarian development. This reaction depends on the response to estrogens from the rabbit's ovaries or from the presence of estrogens in the urine. Obviously a patient who receives an administration of estrogens and who thus excretes

a certain amount of it may give a false test when it is determined by the response of the oviducts. Where the reaction depends on the ovarian response to the chorionic gonadotropins in the patient's urine there should be no alteration in the accuracy of the test when the patient has received theelin or other estrogens.

TREATMENT OF CRUSHED FINGER

To the Editor:—A patient had the distal end of his finger severely crushed. The distal phalanx was avulsed at the interphalangeal joint, and except for a small amount of soft tissue the crushed portion was all but amputated. The crushed tissue was sutured back in place with hope that there might be sufficient blood supply. The finger was splinted by the finger nail, which had remained in place, and by a tongue depressor which was incorporated in the dressing. In treating this case I ordered the extremity kept cold with an ice cap, for which I was criticized. The reason for ordering the cold treatment was to lower the metabolism in the distal end until a sufficient blood supply could be established.

Lieutenant (jg), (MC), U.S.N.R.

ANSWER:—The best results in cases such as that described are probably accomplished by a judicious combination of compression and rest. The surgeon who transplants a flap of skin and subcutaneous tissue is always concerned about its vitality. In this case the surgeon was dealing essentially with a flap with a meager blood supply. Such flaps, as Blair has pointed out, are more likely to die from congestion and failure of the return circulation than from lack of sufficient blood. The venous return is greatly handicapped, more so than the arterial inflow. Compression aids the return circulation and helps to prevent the congestion that leads to tissue necrosis.

There does not seem to be any logical reason for the use of ice in such a case. The surgeon who transfers a flap from one part to another would not employ cold applications, simply because cold arrests tissue metabolism and leads to devitalization of tissue. Arrest of tissue metabolism is simply the early stage of tissue necrosis.

TOXICITY OF PHOSPHORIC ACID IN INDUSTRY

To the Editor:—Will you kindly furnish me with information concerning the toxicity of phosphoric acid as used in factories for rust prevention.

R. G. Hickerson, M.D., Keithsburg, Ill.

ANSWER:—Phosphoric acid as industrially employed for fingerprint removal and rust prevention is not a likely source of injury to exposed workers. It is no more damaging to the skin than an equal concentration of other mineral acids. Phosphoric acid in dilute form is frequently used by oral administration therapy in such quantities as 10 cc. every hour for ten hours. Difficulties currently being experienced in industry from phosphoric acid mixtures used for antioxidation usually derive from the solvent of phosphoric acid, which in many instances is butyl cellosolve. This compound is ethylene glycol mono-n-butyl ether and is credited with being the most toxic of the compounds in its series. Early manifestations center about minor irritations of the eyes and respiratory tract, but in more severe instances there may be inflammation of the liver and kidneys associated with the hematuria. In animals the minimum lethal dose is about 0.5 cc. per kilogram of body weight. Its apparent toxicity is about five times as high as that of the better known ethylene glycol. Other substances suitable as solvents of phosphoric acid are likewise toxic in varying degrees.

CANCER AND MENTAL DISTURBANCES

To the Editor:—What investigation has been made of late years along the line of the effect of mental disturbances and their relation to cancer? I have been in practice over forty years, and my attention has been called many times to the development of cancer following long periods of mental worry over which the sufferer had no control.

Wordsworth M. Elliott, M.D., Durango, Colo.

ANSWER:—Medical literature does not appear to contain reports of close studies of the relation of mental disturbances to the causation of cancer. This is certainly true for late years. So far as known there are no reliable statistics on the relative frequency of cancer in sane and insane persons of the same ages and other comparable states. The reports of hospitals for the insane do not contain accounts of notably large numbers of cases of cancer in their populations. While there is no evidence at hand that "worry" of itself can induce cancer, it is well known that the fear of cancer, cancerphobia, may be associated with mental disturbance. Of course it is not to be denied that worry associated with more or less important disturbances of metabolism and health may appear to favor the development of cancer under certain conditions. The frequency in advancing years of cancer and of states of "mental worry" makes it obvious that the two conditions may occur coincidentally without any causative relationship.

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MORRIS FISHBEIN, M.D.

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JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE
DEPARTMENT, SEPTEMBER—DECEMBER 1945

Titles have been listed or abstracts made of important articles in the following journals in the Current Literature Department of THE JOURNAL during the past four months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in continental United States and Canada and to members of the American Medical Association for a period not exceeding three days. Three journals may be borrowed at a time. No journals are available prior to 1933. Requests for periodicals should be addressed to the Library of the American Medical Association and should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Thus most of these journals are accessible to the general practitioner.

- Acta chirurgica Scandinavica. Stockholm.
Acta dermato-venereologica. Stockholm.
Acta medica orientalia. Jerusalem.
Acta medica Scandinavica. Stockholm.
Acta orthopaedica Scandinavica. Copenhagen.
American Heart Journal. St. Louis.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Fort Wayne, Ind.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Cincinnati.
American Journal of Orthopsychiatry. New York.
American Journal of Pathology. Ann Arbor, Mich.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. and Radium Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Syphilis, Gonorr. and Venereal Diseases. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Review of Soviet Medicine. New York.
American Review of Tuberculosis. New York.
Anais brasileiros de ginecologia, Rio de Janeiro.
Anesthesiology. New York.
Annales de dermatologie et de syphillographie. Paris.
Annales d'oto-laryngologie. Paris.
Annales pédiatriques. Basel.
Annals of Allergy. Minneapolis.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Otolaryngology and Laryngology. St. Louis.
Annals of the Rheumatic Diseases. London.
Annals of Surgery. Philadelphia.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives of Disease in Childhood. London.
Archives françaises de pédiatrie. Paris.
*Archives of Internal Medicine. A. M. A., Chicago.
Archives des maladies de l'appareil digestif. Paris.
Archives des maladies professionnelles. Paris.
*Archives of Neurology and Psychiatry. A. M. A., Chicago.
*Archives of Ophthalmology. A. M. A., Chicago.
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*Archives of Pathology. A. M. A., Chicago.
Archives of Physical Medicine. Chicago.
*Archives of Surgery. A. M. A., Chicago.
Archivos argentinos de pediatría. Buenos Aires.
Archivos del Hospital de niños Roberto del Río, Santiago.
Arizona Medicine. Phoenix.
Australasian Journal of Experimental Biology & Medical Science. Adelaide.
Australasian and New Zealand Journal Surgery. Sydney.
Bollettino della Società italiana di medicina e igiene tropicale. Asmara.
Brain. London.
Brasil-medico. Rio de Janeiro.
British Heart Journal. London.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Industrial Medicine. London.
British Journal of Ophthalmology. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis. London.
British Journal of Urology. London.
British Medical Journal. London.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of the Los Angeles Neurological Society. Los Angeles.
Bulletin of the New York Academy of Medicine. New York.
Bulletin of the U. S. Army Medical Department. Washington, D. C.
California and Western Medicine. San Francisco.
Canadian Journal of Public Health. Toronto.
Canadian Medical Association Journal. Montreal.
Cancer Research. Baltimore.
Chinese Medical Journal. Washington, D. C.
Connecticut State Medical Journal. Hartford.
Delaware State Medical Journal. Wilmington.
Diseases of Chest. Chicago.
Edinburgh Medical Journal.
Endocrinology. Springfield, Ill.
Epidemiological Information Bulletin. Washington, D. C.
Gastroenterology. Baltimore.
Giornale di medicina. Palermo.
Gynécologie et obstétrique. Paris.
Hawaii Medical Journal Honolulu.
Helvetica medica acta. Basel.
Hospital. Rio de Janeiro.
Illinois Medical Journal. Chicago.
Indian Journal of Medical Research. Calcutta.
Indian Medical Gazette. Calcutta.
Irish Journal of Medical Science. Dublin.
Journal of Allergy. St. Louis.
Journal of the Arkansas Medical Society. Fort Smith.
Journal of Aviation Medicine. St. Paul.
Journal of Bone and Joint Surgery. Boston.
Journal of Clinical Endocrinology. Springfield, Ill.
Journal of Clinical Investigation. Boston.
Journal of Endocrinology. London.
Journal of Experimental Medicine. New York.
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Journal-Lancet. Minneapolis.
Journal of the Maine Medical Association. Portland.
Journal of the Medical Association of the State of Alabama. Montgomery.
Journal of the Medical Association of Georgia. Atlanta.
Journal of the Medical Society of New Jersey. Trenton.
Journal of Mental Science. London.
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Journal of the Mount Sinai Hospital. New York.
Journal of the National Cancer Institute. Washington, D. C.
Journal National Malaria Society. Tallahassee, Fla.
Journal of Nervous and Mental Disease. New York.
Journal of Neuropathology and Experimental Neurology. Baltimore.
Journal of Neurophysiology. Springfield, Ill.
Journal of Neurosurgery. Springfield, Ill.
Journal of Nutrition. Philadelphia.
Journal of Obstetrics and Gynaecology of British Empire. Manchester.
Journal of the Oklahoma State Medical Association. Oklahoma City.
Journal of Pathology and Bacteriology. Edinburgh.
Journal of Pediatrics. St. Louis.
Journal of Pharmacology and Experimental Therapeutics. Baltimore.
Journal of Physiology. Cambridge.
Journal of Royal Naval Medical Service. London.
Journal of the South Carolina Medical Association. Florence.
Journal of the Tennessee State Medical Association. Nashville.
Journal of Thoracic Surgery. St. Louis.
Journal of Urology. Baltimore.
Kentucky Medical Journal. Bowling Green.
Khirurgiya. Moscow.
Lancet. London.
Medical Annals of the District of Columbia. Washington.
Medical Journal of Australia. Sydney.
Medicina. Buenos Aires.
Medicina. Mexico.
Military Surgeon. Washington, D. C.
Minnesota Medicine. St. Paul.
Monatsschrift für Geburtshilfe und Gynäkologie. Basel.
Nebraska State Medical Journal. Lincoln.
New England Journal of Medicine. Boston.
New Orleans Medical and Surgical Journal.
New York State Journal of Medicine. New York.
Nordisk medicin. Gothenburg.
North Carolina Medical Journal. Winston-Salem.
Northwest Medicine. Seattle.
Ohio State Medical Journal. Columbus.
Pennsylvania Medical Journal. Harrisburg.
Physiological Reviews. Baltimore.
Practitioner. London.
Prensa Médica Argentina. Buenos Aires.

Presse médicale, Paris.
Proceedings of Royal Society of Medicine. London.
Psychosomatic Medicine. Baltimore.
Public Health Reports. Washington, D. C.
Puerto Rico J. Public Health & Tropical Medicine. San Juan.
Quarterly Journal of Medicine. Oxford.
Quarterly Journal of Studies on Alcohol. New Haven, Conn.
Radiology. Syracuse, N. Y.
Review of Gastroenterology. New York.
Revue d'immunologie, Paris.
Revista chilena de pediatría. Santiago.
Rhode Island Medical Journal. Providence.
Rocky Mountain Medical Journal. Denver.
Sang, Paris.
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South African Journal of Medical Sciences. Johannesburg.
South African Medical Journal. Cape Town.
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Surgery. St. Louis.
Surgery, Gynecology and Obstetrics. Chicago.
Texas State Journal of Medicine. Fort Worth.
Tubercle. London.
Union Médicale du Canada. Montreal.
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Virginia Medical Monthly. Richmond.
*War Medicine. A. M. A., Chicago.
Western Journal of Surgery Obstetrics and Gynecology. Portland, Ore.
West Virginia Medical Journal. Charleston.
Wisconsin Medical Journal. Madison.
Yale Journal of Biology and Medicine. New Haven.

SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "OS," Organization Section; "ab," abstracts; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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